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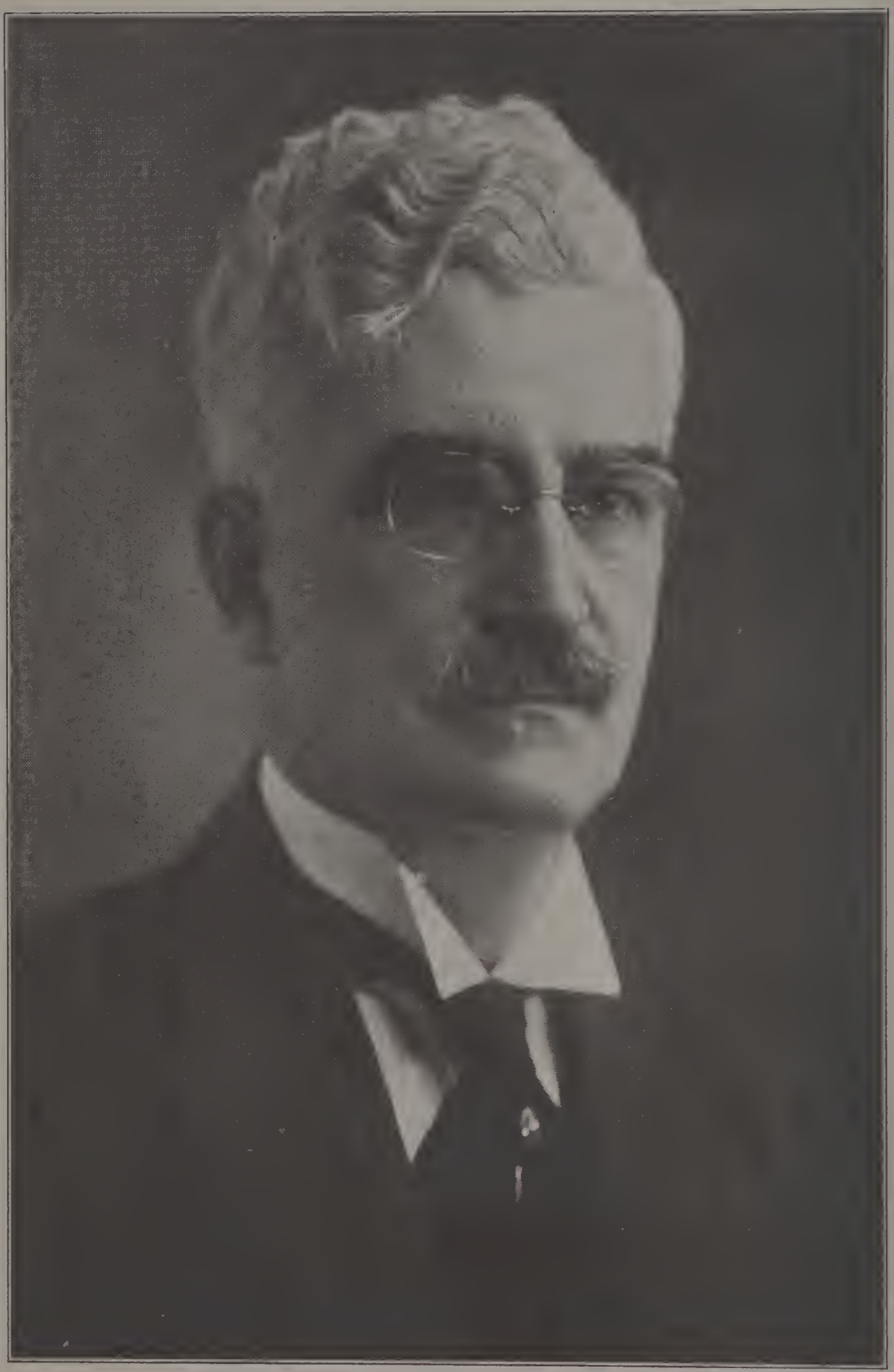

R. Pencoyd Graham. M.D.

Water in Disease and in Health

BY

R. LINCOLN GRAHAM, M. D.

NEW YORK

A COMPLETE AND PRACTICAL GUIDE IN THE USE OF WATER, BOTH INTERNALLY AND EXTERNALLY, FOR THE PREVENTION OF DISEASE AND THE PROMOTION OF HEALTHY ACTIVITY OF THE HUMAN SYSTEM.

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INTRODUCTION

Sickness and Disease enter into everyone's life and yet *the absence of logical knowledge to meet disease is almost universal.* Because of this ignorance, that which is simple becomes grave; that which is curable becomes fatal; that which should be of little concern becomes of the greatest anxiety. In other words, humanity is almost as ignorant of the simple facts of Health and Disease as they were in the darkest ages.

This simple Work is inspired by the experience in my many years of contact with disease in all forms, and the exceptional results I have known in the correcting of Disease by the simple uses of Water to promote the cooperation of Nature in bringing about Health.

As an individual I can treat but a limited number of my fellowmen, but in revealing and explaining to them what years of study and experience have proved, I am inspired to write this simple work.

Nature is in itself perfect, but when affected by a disease, Nature must be *encouraged* to meet this exceptional condition, and it is *by working with and helping Nature by natural methods and the use of a natural element* (*water*), that I am striving to fortify and educate my readers to correct Disease and promote Health.

Civilized nations are beginning to recognize that one of their greatest losses is through the physical ailments of their citizens.

The only natural cause of death is, advanced age, and we should strive to avoid anything which would undermine or deplete the human frame of its proper reward, that is, its 'three score years and ten.'

This work will be found of splendid suggestive value to physicians of any school of medicine, to parents in the upbringing of their families, and to children in their concern for their parents.

I was a young enthusiastic Graduate of Medicine, when I was brought face to face, in Dr. Guenther's "Bad Anstaldt," with the astonishing results obtained by this eminent physician. The impossible became possible, the helpless became vigorous, under the ministrations at this institute of healing. Dr. Guenther and myself labored side by side in his little institution and I was able to absorb much of his profound teachings. This work is dedicated to him.

R. Lincoln Graham, M. D.

THE HISTORY OF HYDROTHERAPY

(Curing by Water)

The first attempts at scientific Hydrotherapy were made by Johann Sigismund Hahn in Silesia, at the beginning of the Eighteenth Century. Water as a curative agent first gained prominent recognition in the medical world in 1702 when Sir John Floyer, a physician of Litchfield, England, wrote a treatise entitled "The History of Cold Bathing to the Ancient and Modern." Subsequently, an English Medical Authority, Dr. Currie of Liverpool, in 1797, wrote a treatise called, "Medical Reports on the Effects of Water, both Warm and Cold, as a Remedy in Fevers and Other Diseases." These Works were translated into German and in 1804 Professor Gertel, of Ansbach, republished them and quickened the popular movement toward the recognition of water as a therapeutic agent, by his unqualified commendation of drinking water as a remedy for all diseases.

Vincenz Priessnitz, however, a farmer of Graefenberg, in Austrian Silesia, is looked upon as the real father of modern Hydrotherapy. The fame of Priessnitz drew students of all nationalities to Graefenberg, as well as patients suffering from

ailments that resisted the usual forms of medical treatment, altho the efforts of the German priest, Sebastian Kneipp (1822 - 1897), probably went further to popularize the "Water Cure," as it was then known, than all other measures combined.

The very success in Germany, France and America of the methods taught by Priessnitz and Kneipp, resulted in the bitter condemnation of Hydrotherapy by the physicians of the older school of medicine. But, it is noticeable that even the most skeptical of Allopaths gradually adopted modified forms of Priessnitz's methods. The Germans, Phreninger, Runge, and Brand of Berlin, Raljen and Surgensen of Kiel and Liebermeister of Basel, between 1860 and 1870 employed the cooling bath in Abdominal Typhus, with results which were striking enough, even after every deduction because of defective classification had been made, and led to its introduction in England by Dr. Wilson Fox, whose able monograph on the subject commanded general acceptance.

In the Franco-German War the cooling bath was largely employed in conjunction with quinine; and it or the Cold Wet Pack is now recognized as invaluable in the treatment of all conditions complicated with high temperature.

The Cold Wet Pack has of late been much used in fevers of all kinds, both in private and hospital practice, while the Turkish Bath, introduced about sixty years ago by David Urquhart, on his return

from the East, has become a public institution, and with the morning tub and general practice of water drinking, are noteworthy contributions of Hydrotherapy to public health.

Late in the '80's Winternitz of Vienna developed the theory of treating diseases by the use of the nerve reactions from water. Winternitz claimed that the nerve effects were both direct and reflex. The extent of their influence depended upon the temperature of the water and upon the force with which it was applied. Friction by rubbing and also massage increased the responses to the stimulation. The shower, spray, alternating hot and cold bath, with manipulations and massage, held precedence over the Cold Pack and the prolonged bath. Winternitz practically abandoned the internal use of water, and depended upon the stimulation produced by the external use to obtain his results.

Guenther, a student of Winternitz, established his "Bad Anstaldt" in Berlin in 1890. He followed most of Winternitz's theories but confined himself largely to the correction of kidney lesions.

I may claim the honor of having been the first to introduce the internal use of water by the "Osmotic Treatment." This was done during my association with Guenther in Berlin in the early '90's.

Baruch, also a student of Winternitz, first introduced Hydrotherapy in America. It was coldly

received, however, not being understood by American Physicians. But as time went on, it was occasionally practiced by them, and in later years it was frequently practiced by Professors Osler, Spitzka, Oppenheimer and others, among the most eminent internists.

I have, however, so simplified the use of water in disease that it may be used in any home and without elaborate apparatus. By my technique, Hydrotherapy is, of all medical methods, the one most certain to yield definite, helpful results, not only for the minor ailments but for practically every grave condition to which human beings are liable.

CHAPTER I

The Dangers of Drugs

The thing that is capable of doing good is often equally capable of doing harm. To what extent and under what circumstances a drug is capable of doing good or harm, are questions that must ever be borne in mind by the drug user or by the physician prescribing drugs. When we add up the benefits and compare them with the ill-effects, the latter will usually outweigh the former.

Why does a physician so frequently combine his remedies in the form of a prescription? In a vast number of cases it is done to offset the undesired effect of one drug by the modifying effect of the other drugs in the mixture. Why do physicians keep records? Simply to help them note the effect of their remedies, and to avoid, if possible, undesired results from the use of drugs or the scalpel.

Why is it so very important to keep the dosage of drugs down to minimum? Drugs do not affect everybody in the same way. For example, some people will have a severe itching rash from minute doses of Quinine. Others are salivated by a grain of Calomel. Some die from moderate inhalations of ether or chloroform. Some die from hemor-

rhage of the operation. Some collapse from the depressing effects of Coal-tar products.

Danger!—danger!—danger!—on every hand. From what? From the very agents that are used to escape from danger. Is this danger ever absent? Practically never. A moderate dose of Castor Oil has been known to bring on a marked Diarrhea, with cramps and resulting Colitis. Such household remedies as Baking Soda have excited an acute Nephritis (inflammation of the kidneys). Soda Bicarbonate taken to relieve the distress of excessive acidity of the stomach only ultimately increases the flow of Hydrochloric Acid in this organ. It is well known that most purgatives result in increased constipation. Stimulants react as depressants; depressants react as stimulants. Narcotics increase the susceptibility to the very pain they are given to deaden.

The very medicine that checks the disease or modifies its severity, retards the processes of convalescence. Tonics while they increase the functional activity, are in reality like whipping a tired horse; that is, they compel a weakened organism to do increased work, which ultimately will further weaken the structure of this organ.

Specific remedies not only destroy the infection, but produce depleting action of the structural organism. Mercury will destroy the Spirochete of Syphilis, but it will inflame the kidneys and the Salivary Glands. Antipyrine will check the pro-

gress and pain of joint Rheumatism but it will break down the oxygen of the blood, and reflexly prove very depressant to the vital powers.

Why is it necessary for the physician to observe the condition of the patient? To note the progress of the disease? No, rather to note the effects and modify the action of the remedies he has prescribed. The same remedy will not act on the same patient in the same way at different stages of the disease.

"Fresh Drugs Used Here." This sign is frequently seen in the apothecaries' shops. Why? Do drugs vary in quality as in the degree of their freshness? Of course they do. Every text-book on therapeutics says emphatically that certain drugs must be fresh, or freshly made. If the infusion of Digitalis, for example, is old enough to break down certain of its toxic resins, it will produce violent nausea and vomiting.

Many a victim of a sprained joint has been tortured by the painting of the parts with an old Tincture of Iodine, while a freshly made Tincture would have caused little discomfort. Tinctures and fluid extracts are largely composed of alcohol, which readily evaporates, thus concentrating the amount and strength of the drug in the decoction and increasing its activity and power. Even the druggists are alert to the dangers of the drugs they dispense, as the slightest carelessness on their

part may result in the gravest danger to the person taking the medicines they compound.

Rheumatïsms that have been treated by Salicylates, the standard remedy for this disease, quite frequently are complicated by grave disturbances in the functions of the stomach, from the effect of the drugs on this organ. Coal-tar products usually produce a depleted hemoglobin of the blood. Quinine tends to bring about extreme nervousness or blood tension. Morphia causes mental depression. Ammonia salts will deplete the excretion of Urea, and produce Obesity and Anemia. Practically every drug has its objectionable and dangerous features.

Nature always tends to accommodate herself to constant conditions. It is the exceptional that upsets her equilibrium. The young lad will be deathly sick from his first pipe of tobacco, but under constant use of the weed will develop into a human smoke-stack, when he may suffer little discomfort.

The new-born infant not infrequently suffers from Coryza, or Cold in the head, from its first bath but in a short while will tolerate prolonged bathing with no ill effects. Thus from our early infancy we become accustomed to water, internally and externally, so that the reactions from water become practically imperceptible.

Apart from the fact that we naturally become very tolerant to water in its various uses, there is the additional fact that water is a normal substance

found in all the tissues and fluids of the body; consequently, its functions are in accord with the equilibrium of normal functioning and growth. Thus it can be readily seen that *water has practically none of the dangers attributed to drugs, and* that such slight dangers as are possible are due to degrees of heat and cold. Therefore, moderation in water temperature insures our freedom from dangers. Even the inexperienced, if they are well-balanced and careful, may undertake the care of the sick with every confidence of bringing about no injurious effects.

In practically every house in the land, at any hour, may be found a complete Hydropathic Outfit to meet all emergencies. In acute conditions, *the water bucket or faucet, towels and a fountain syringe are all that is necessary to meet most demands.* A blanket and a lamp have often provided me with the Cabinet Pack for Chronic Conditions. I have never seen a home where I was unable to find a sufficient number of bathing accessories to meet the emergency, though in my early days, when in general practice, I made as many as forty professional visits a day, and treated acute and chronic conditions in practically every form of illness.

My success in treatment by Hydrotherapy over all other forms of treatment more than warrants the placing of this simple volume in the hands of all classes. My methods are so modified, however,

that the shock of the cold plunge, as advised by Winternitz and his followers, is eliminated. The prostration and exhaustion of the prolonged sweat are avoided by merely affording the patient access to cool, fresh air during the period of sweating.

Convalescence is not retarded by medicines, nor is the vitality of the patient depleted by the means used for promoting recovery, when water is the curative agent. Typhoids, Pneumonias, Dysenteries and other grave conditions readily become benign and require no long protracted period for convalescence under Water Treatment. Nature is placed in the best possible condition to meet and cure any infection and rallies with vigor to throw off the disease.

The action of water, correctly and scientifically used, being physical as well as physiological, benefits the weak quite as readily as the sturdy. This is far from true with drugs and medicines, which must rely solely upon their physiological properties and possess no physical therapeutic value.

The action of water is almost immediate. The good effects are often perceived in less than five minutes. I have seen the high fever of Pneumonia reduced to normal, and delirium disappear in a few minutes under proper water "packs". Medicines, however, may be so powerful that they will frequently check the action of water. This must be kept constantly in mind; *for the taking of medi-*

cines often modifies the benefits of Water Treatment.

Summing up the advantages of water Treatment as superior to the use of drugs, I would say, first, *the action of water is more simple and more easily understood and by it we gain direct results that we can control,* in contrast with the uncertainty of the action of drugs, both as to their effect and to their remote action. Second, treatment by water is in direct accord with Nature's method to meet the exigency of the disease and is cooperative to promote and hasten recovery, in contrast with medicine used antidotal to the disease and capable of injuring the physical economy as well as of having a beneficial effect upon the actual disease. Third, the results from the use of the water treatment are immediate and enable Nature to modify the severity of the disease.

CHAPTER II

Water In The Human Body

Water is a part of the Human Economy. It must be borne in mind that the various tissues in the body vary in hardness as to to the quantity of water which they contain,—vary all the way from the secretion of the Salivary Glands, which are about ninety-nine and three-tenths per cent. water, to the hard structure of the bone, which contains less than three per cent. of water. Roughly speaking, the softer the tissue is the greater proportion of water it contains, and it has been estimated that the average amount of water, per weight, in the human body will approach seventy-two per cent.

However, much more important from the standpoint of disease is the fact that the *fluidity of every secretion of every organ in the body is Water.* Thus it can be readily understood that with a diminished amount of water intake, there is a relatively diminished opportunity for active secretion of every gland in the body. While again, the excessive activity of any one organ promotes the necessity of increased intake, in order to satisfy the demands of other organs within the human body. Perhaps this can be better understood by referring to the great thirst ever present in ad-

vanced conditions of Diabetes, where the kidneys are constantly draining the blood of vast quantities of water.

Thus it can be readily recognized that a proper supply of water in exceptional conditions is very essential to bring about a healthy activity, and natural conformity in this activity, between the various organs and systems of organs. I would cite as an illustration of this—a shock of an Acute Infection is always modified very rapidly by the liberal supply of water in the blood, such as is afforded by the use of the High Colon Irrigation, water being very rapidly absorbed in the Ascending and in the Transverse Colons. In fact, the uniform rule in all acute infections, to use this means of treatment will in all cases greatly modify the severity of the attack and go a great way towards promoting the return to normal health.

Not alone does water play a very large part in the structure of the tissues of the human body, but it likewise plays a very large role in the digestion of food and its conversion from food into blood and tissue. The Salivary Glands secrete with every meal, before, during and following the meal, approaching a pint of secretion which is almost entirely water. Under the action of the fermenting Ptyalin this water enters into the conversion of the starches into sugars and subsequently into fat or Glycogen. A rough illustration of how rapidly water will attack starch is the simple house-

hold custom of pouring boiling water over dry starch, in which not only the entire character of the starch is changed but the bulk is vastly increased. Thus it can be seen that a great percentage of the water reaches the vital fluids as part of the sugars and fats.

Water also enters largely into the formation of the excretions of the body. On an average, the urine approaches ninety-nine per cent. water, the sweat about ninety-six and one-half per cent. water and the stool from five to twenty per cent. water. Again, respiration requires a very considerable supply of water. The humidity of the air after being expelled from the lungs will approach from two to five per cent. and a fair approximation of the amount of water thrown off by the lungs in twenty-four hours will exceed a pint.

In conditions of disease, where Nature is abnormally active in combustion of any secretion and in tissue changes, it can be readily understood that an excess supply of water readily affords Nature opportunity to meet this excessive demand, and the danger of complications and grave derangements arising from infections or inflammatory changes is always greatly modified, and in fact, frequently corrected by supplying to nature this extra amount of water necessary to meet the emergency. It requires no great stretch of imagination to recognize that an organ in disease, requiring an excessive amount of water and not obtaining it would

drain water from the unaffected organs and in this way complicate them with the original disease.

There is a law of Physiology which is very essential that anyone using water in the cure of disease should recognize, that is,

> "The presence of a substance in an organ secreted by that organ, promotes its secretion."

An illustration of this is that the excessive indulgence of water results in the excessive secretion of the kidneys and usually the sweat glands, and as every gland secretes water as the fluid base of its secretion, the outcome of excessive use of water always results in a tonic action on the glands of secretion.

Thus it can be readily understood thatprivation of water always results in exhaustion of the vital forces. One may abstain from solid food for days, and with moderate rest experience but little fatigue, provided he have a bounteous supply of water, but, deprived of water, emaciation and fatigue rapidly follow.

Let us sum up roughly the requirements of water in the system. Every secretion and excretion requires water. Every organic action requires water. The basis of the lubricants of the joints is water and without a liberal supply will soon manifest pain. The starches, and the sugars require water for their conversion into Glycogen. A fair estimate of the amount of water required for twenty-

four hours, in the average man or woman, would be a minimum of three pints.

The demand for water is constant, and Nature has supplied a reservoir in the Ascending and Transverse Colons where this supply may be obtained. Very little water is absorbed in the Stomach and Small Intestines. I will go further into details of this later on, but it is proper just here to emphasize this fact, because the efficiency of water in fevers cannot reach its maximum effect until the water reaches this part of the Alimentary canal. Thus is it that drinking water will require from three-quarters of an hour to an hour and a half before it serves to reduce the fevers, whereas with water thrown directly into the Transverse and Ascending Colons the effect in reducing febrile changes is far more readily obtained.

Practically all the water in the human system is obtained from drinking and from food. The skin does not absorb but minute quantities even by prolonged general immersion. In damp weather some water is obtained from condensation in the upper air chamber and involuntarily swallowed, thus accounting, to a mild degree, for the absence of thirst during rainy seasons. (The main cause is the lack of evaporation of the sweat.) The skin glands are more active in the heat than in the cold, consequently we require more water in the summer than during the winter.

Food supplies a fair amount of water. Vegetables will vary from sixty to ninety per cent. of their bulk in water content. Proteids, that is, generally speaking, meats, vary from fifty to eighty per cent. with water content.

Water is a solvent and diluent to the various acids and mineral salts found in the body. It enters into the formation of the Hydrochloric Acid of the stomach. It neutralizes many of the compound vegetable acids, such as butter acid, vinegar acid and milk acid.

Most bacteria are subnormal in activity in an excess of water. In fact, water in itself is a splendid medium for the cultivation of chemical poisons. In simple terms, in water most germs will generate a poison which will actually destroy the germ itself. (We will discuss this in other chapters.)

The affinity of water for mineral salts is pronounced. We have no less an example of this than the vast quantities of mineral salts which we find in the sea-water. In fact, the very freshness that we experience in drinking water comes from the mineral salt content. Distilled or rain-water tastes flat.

As a diluent water assists in carrying off in suspension the Ammonium Salts in the form of Urea, Urates and Uric acid. Lime Salts, Magnesium and other Mineral Salts are found constantly in the Urine, being washed out in suspension by the kidneys.

Water supplies the blood with its fluidity bringing readily to the white corpuscles the various elements of food for their conversion. It supplies the red cells with a certain amount of oxygen. (A simple illustration of aerating the water by throwing a fine spray up into the atmosphere, as is done at our various water works, demonstrates how readily water will absorb and retain oxygen.)

One of the first manifestations of a lack of water is the general pallor and emaciation, due largely to deprivation of the blood of its oxygen. In fact water in the blood can be looked upon as a reservoir of oxygen from which the red cells constantly derive their supply of this vital element.

CHAPTER III

Disease

We have a Complex Mechanism in the Human Economy. We have systems that control other systems and systems that depend upon others for their function. Within these systems are various organs and within these various organs are subdivisions, etc.

Every part of the human body, every system and organ therein contained, is not in the smallest degree, entirely independent of the workings and cooperation of every other organ and system within the physical structure. Thus it can be readily seen that the results or manifestations of disease are frequently and, in fact, usually remote from the cause. A simple illustration of this might serve to better explain. In Typhoid Fever the original infection is in the Glands (Peyers) at the end of the Small Intestines and the first manifestations of this infection is the persistent sense of full headache. Another illustration is that Malaria is a disease of the blood and the spleen and it very frequently is ushered in, in cases of children, by a so-called bilious attack, that is, vomiting and fever.

Even in the most common of diseases skilled physicians are at a loss to make a positive diagnosis of the ailment, because of the commoness of the symptoms of so very many different acute infections. It has been the humiliating experience of every physician upon finding a congested condition of the lungs to anticipate a case of Pneumonia, only to find upon the second or third visit that Measles have appeared on the skin, and that the symptoms of Pneumonia have disappeared. In fact, I recently met a case where three physicians in consultation diagnosed the case as Appendicitis only to find that after they had removed this *poor inoffensive piece of gut,* the child broke out in an eruption of Measles, and that with the subsiding of the Measles all the other symptoms disappeared.

In using water in disease, the Hydropath has the advantage over other schools of healing. In other words, he assists in the natural course that Nature is following, and in this way does not complicate matters or interfere in any way with the efforts of Nature to meet the exceptional condition.

Perhaps an illustration of this would manifest itself. Unquestionably seventy per cent. of our so-called Colds are Malarious in origin. Nature accompanies them by a tired feeling and a sense of thirst. The unpleasantness of the chill prompts warmth, and to a very large extent Malaria in its early stages is eradicated from the system by the

drinking copiously of hot water, resting in bed and obtaining a sweat. On the other hand, the custom of meeting this sense of tiredness, headache and exhaustion, with the use of a Coal-tar medicine—any one of the fifty-seven varieties—while its sedative action on the nervous system deadens the manifestations of the infection, in reality this very sedative action it has upon the efforts of Nature to meet the situation, affords opportunity for the disease to become more grave. Many a Chronic Invalid owes his condition to the indiscriminate use of Coal-tar products.

The nomenclature of disease is very simple to a physician and probably to most of my readers. However, I take this opportunity to say that 'itis' added to the name of an organ simply means inflammation of that organ, such as Bronchitis means Inflammation of the Bronchial Tubes; Pneumonitis—Inflammation of the Lungs; Carditis—Inflammation of the Heart, etc. We physicians have other additional subdivisions, for instance, 'Endo' means within or lining, such as Endocarditis, means Inflammation of the Lining or the inside of the heart. 'Peri' means the outer or surrounding membrane of an organ, such as Pericarditis means Inflammation of the Tissues around the Heart. Occasionally we use the word 'Para', which means the tissues in and about the outside of an organ. However, there is but little difference in the nature and character of inflam-

matory changes in any of the tissues; they either increase or decrease in the amount of blood supply; either increase or decrease in their fundamental activity; either increase or decrease in their organic structure; either return to normal conditions, or progress to degenerated changes. In other words, anything which is out of normal beyond a certain extent is diseased, and in curing sickness—*we do not create, we simply restore what formerly existed.*

In our efforts to restore what formerly existed we have fundamentally this splendid basis upon which to work, that is, *it is natural for the human body to be normal and healthy, and the efforts of Nature are always in the direction of producing normal healthy conditions,* so that we have strong cooperation in the workings of Nature.

After being in contact with all conditions of disease and health, with the experience of thirty-four years of constant study, practice, observation and association with my colleagues, I can honestly urge everyone of my readers to moderate any possible prejudice that he or she might have toward the cause and production of disease. All persons whether they be followers of Lister, who believed every sickness comes from a disease germ; or followers of the Mayo Brothers, who believe the knife and the surgical operation stand out distinctive as the remedy par excellence; should not permit their

enthusiasm to blind them to the merits of any curative measure.

Basically, Nature cures. Scientifically, we assist Nature to cure. Criticisms in medicine should be tolerated with great patience for they are the "spurs" that urge us on toward better understanding and better reliance upon our ability to help Nature. The physician in the past hid his knowledge of medicine, or perhaps his lack of knowledge of medicine, behind a professional cloak, and in this way not only did he deny to the patient the cooperation of his family in the promotion of his recovery but likewise denied to himself the observation and the wisdom that instinctively manifests itself about the bedside, in the vast majority of cases.

In their ignorance of the knowledge of the manifestations of disease the family are very liable to become excited and apprehensive. In fact there is a very wide spread ignorance in even the simplest matters pertaining to disease, and to a large extent this ignorance owes its foundation to the failure on the part of the Medical Profession to educate the public.

This simple Work will do much to put in an understandable way the *real fundamentals* of Health and Disease.

It must be kept in mind that the tendency of Nature is always to cure, and in the great majority of cases the very beginning of the disease is prac-

tically free from complications so if Nature is helped and assisted in the beginning, it will far more readily return to normal conditions.

I have been thru a great many epidemics and have indeed felt gratified at the mild character of my cases, in contrast with the gravity and even fatality of cases t r e a t-e d otherwise by my colleagues.

During the epidemic of the Spanish Influenza in New York, I treated over four hundred cases of Pneumonia and probably that number of cases without pneumonic manifestations. By the simple procedure of beginning the treatment with a High Colon Irrigation, and advising a glass of water drunk every hour, the application of the Local Cold Pack in the Pneumonia cases, and abstinence from food until the patient requested the same, I had the pleasure of having one hundred per cent. recoveries. During this time fatalities of this disease reached as high as twenty per cent. In other words, like other physicians, I knew practically nothing of this disease or knew of no antidote for it, but I merely helped Nature to meet the emergency and I was successful in every case.

It is my honest conviction that were the curriculum of the Medical Schools more confined to Hydrotherapy, the study of a physician would be lessened tenfold. In fact, the watchword of the Hydropath should be — "UNDERSTANDABLE SIMPLICITY."

CHAPTER IV

Nature's Methods of Correcting Disease

Nature endeavors to correct abnormalities by several methods.

1. By increased Combustion within the blood and within the tissues, more especially in the fluids of the tissues.

2. By Elimination, that is throwing off from the system the cause. For example, in all eruptive diseases, like Measles or Scarlet Fever, Nature endeavors to eliminate the poisons by first throwing them off by the skin, and subsequently by the Kidneys.

3. Nature generates within the fluids of the body Antitoxins or, as physicians usually term it, Autogens. These Autogens are usually found in the fluid portion of the blood and in the various secretions, and they are capable of not only checking the activity of the infection which originates them, but are also capable of actually destroying germs. In addition these Autogens have a Prophylactic or preventive action. This is the reason why people who have had a disease are rarely subjected to a second infection, and if they do become infected again, the infection is usually of a very benign or slight character. Frequently, the Auto-

gens of one disease will have an antitoxic effect upon other diseases. This is the theory on which Vaccination is practiced, that is, Cowpox generates an Autogen which is destructive to the germ in Smallpox. These Autogens, according to some very prominent English Medical Authorities, as well as a few of the American Medical Authorities, are attributed to a chemical change in the water.

4. Nature endeavors to correct by Degeneration. This latter class is probably least understood among the Medical Authorities and is followed in various methods. Perhaps the illustration of Tuberculosis would better serve to explain. Frequently, the seat of the Tubercular infection, the tubercle or the actual tissue becomes shrunken and hardened, and contains practically very little but deposits of lime. By this degeneration the substance of the tissue is broken down and re-absorbed, and either used to nourish other tissues, or eliminated by the organs of elimination. The hardened, calcified remains as a rule then become encysted, that is, surrounded by tough tissues and prevented from entering into any functional activity with the rest of the human system. A very well known illustration of this is the formation of the Corn. The underskin becomes inflamed and the process of inflammation subsides leaving a deposit of lime salts, which is in reality the Corn.

COMBUSTION

The technical term for increased Combustion or increased tissue activity, is increased oxidation or Fever. In other words, Nature reacts to any abnormality such as excessive exposure, infection or trauma, (Blow) and by increasing the activity of the tissues hastens the return to the normal as well as builds up the results of the abnormal. The ramifications of the benefits of this are many. The first shock of a disease, a blow, or an infection, is to lessen the vitality. The increased Combustion promotes a return beyond normal activity. Increased Combustion serves to hold many of the infections in check. A germ that will be active in a temperature of one hundred will be less active in a temperature of one hundred and five. In other words, fever should not be looked upon as a dangerous condition, rather the opposite. Fever in itself largely demonstrates the ability of Nature to react to the shock of an injury, infection or disease, and I wish to go on Record as saying, that physicians striving to reduce fever by means of depressing Coal-tar products are under-mining Nature's best efforts to promote the return to normal health. On the other hand, fever, if given full opportunity to exert its best benefit, is usually of very short duration, even in the most virulent of fevers such as Typhus or Typhoid Fever. In other words, *fever is the reaction,* not the cause, and

should be treated in a manner which will cooperate with Nature to make its results more efficient and its duration most limited. The illustration of Pneumonia is probably the most common and most emphatic in the category of disease, in this respect. Not infrequently a chill from the depression of a shock of this grave disease will last from one to five hours, followed by a temperature of from 104 to 106 with delirium. It is a well recognized fact that in former years it required nine days before the crisis of Pneumonia passed, that is, before the fever attempted to reduce to normal, yet after treating many hundreds of Pneumonia cases by use of Water, I have yet to meet one that will not respond to normal temperature within one-half hour after the proper use of the water; in that, I afford Nature opportunity to react, and do not interfere with Nature by using drugs. My treatments of Pneumonia vary little from the treatment of any acute fever accompanied with inflammatory changes of any internal organ. (This treatment will be discussed in future chapters.)

ELIMINATION

Elimination must be carried out by one or more of the organs of elimination, which, roughly speaking, are the Stomach, the Bowels, the Skin, the Kidneys and the Lungs.

In all eruptive diseases such as Measles, Scarlet Fever, Smallpox, Chickenpox or Syphilis, Nature attempts to throw off the infection thru the skin, and in so far as we cooperate with Nature we are working in the proper channels of elimination. These are the cases when the sweat is indicated.

Acute infection of the Stomach, such as Whooping Cough finds the Stomach, or vomit the means of elimination.

The Bowel enters into practically every disease, either as the main or the associate organ of elimination. However, certain diseases are more pronounced than others in this respect. Asiatic Cholera, Dysentery, Typhus or Typhoid Fever, are classed among those more particularly depending upon the Bowel for elimination.

The Kidney can be rightly classed as an associate organ of elimination. In practically every disease it enters into the throwing off of the infection. However, it is always advisable to relieve this organ from as much of this work as is possible, because of the proneness with which these poisons are apt to cause degeneration within the actual structure of the Kidney itself. Thus is it very imperative in all eruptive diseases that the Skin be called upon to mainly function the elimination. Also, in Typhus, Typhoid Fever and Pneumonia, the Bowel should be used as the main organ of elimination.

The lungs are very important organs of elimination and this importance is rarely recognized, either by the Medical Profession of any School or by the Laity. In all diseases we have either an excess or a subnormal combustion, and it is very imperative that the gases generated in the blood should have opportunity to be eliminated. Much of this elimination can not be arrived at unless these gases have opportunity to meet their chemical affinity in the air. Therefore, it is absolutely necessary in all conditions of disease, whether of acute or chronic variety, that the blood, by the means of respiration, has an unobstructed access to the free oxygen and the free nitrogen of the air. The lungs also throw off much of the degenerated processes locally in the air passages by means of expectoration. The characteristic expectorations of Pneumonia, Pulmonitis and Bronchitis are familiar to all of us.

AUTOGENS

There are many organic chemical changes which cannot be demonstrated in the laboratory, yet we obtain the clinical results within the active live animal tissues. The whole theory of Antitoxin is based upon the development within the horse, the cow or the sheep, or rather in the fluid portion of the blood of these animals, of a substance which is antagonistic to the germ of infection. The so-called Antitoxins on the market are nothing other than

the fluid portion of the blood of animals that have been infected by that peculiar disease. The Diphtheritic Antitoxin in substance, is the fluid portion of the blood of the horse or cow infected by Diphtheria. On the other hand, the vaccine differs in that it is the Antitoxin of one disease capable of having an Antitoxic effect upon another disease. In other words, vaccine is the Antitoxin of Cowpox which has proven capable of modifying the effects of the infection of Smallpox. Recent experiments show that not only does vaccine lessen the effects of Smallpox but it has a somewhat similar action on Diphtheria, Typhoid Fever, Pneumonia and Cholera.

In treating by water, certain physiological effects must be kept in mind. In other words, an increased amount of water in the blood stimulates an increased activity of the blood and incidentally the various organs that both secrete and excrete water. Consequently, we have as the result of this increased activity an increased generation or development of the Antitoxin or Autogens within the body.

As I have said in previous chapters, the Ascending and Transverse Colons are the natural reservoirs of the human body, and from these organs water, more readily than otherwise, reaches the vital fluids. It can be readily seen that in all infections of every variety the initial step should be the High Colon Irrigation. It can be recog-

nized that the blood of a sheep, a cow or a horse is a foreign body and does not quickly accommodate itself to the normal contents of the blood, and is even capable in itself of developing toxic results, and has, to a more or less degree, a depleting effect upon the system. Whereas, the individual, generating his own Antitoxin, has none of these menaces.

It cannot be stated definitely whether this Antitoxin is a chemical or a physiological body. Experiments rather favor the theory of a Chemical Antitoxin. Dalton of London, Russell of New York, and others including myself, in such violent infections as Gonorrhea, have simply exposed the discharge to sterile water, and by filtrating thru a Bergfeld Filter, eliminated the infection, and by hypodermically injecting the water, were able, in a number of cases, to destroy the infection and correct the disease.

Physicians, enthusiastic for this means of treatment claim additional benefits, that is, that there is never an unmixed infection. In other words, we never find an infection where the germ is not accompanied by a germ of another character and as a consequence the antitoxin thus generated in the sterile water is a mixed Antitoxin, and is beneficial in correcting the mixed infection. There is no better medium of germ cultivation, and cultivation of the Antitoxin to any infection, than the individual thus infected. Therefore, the logical

and best method of obtaining the proper Autogens in the body is to promote the rapid absorption and the rapid elimination of water in the body.

In my early years of practice I was uniformly successful in treating Diptheria in this way. Children under two years of age I subjected to a High Colon Irrigation accompanied by a sweat to promote the absorption of the water; drinking copiously out of the nursing bottle or otherwise of water. It was not infrequent to find the membrane within the throat entirely dissolved within twenty-four hours after beginning the treatment. Doctor Guenther and myself experimented in twenty-eight cases of Diphtheria with one hundred per cent. recoveries, *no after effects,* and no Kidney involvement. In order to insure a rapid absorption of the water, it is very necessary that a certain degree of warmth be maintained in the body. Consequently in all severe infections, the patient should stay covered in bed to promote activity of the skin.

DEGENERATION

Degeneration can occur in mass when it is called Gangrene. It can be cellular when it is called Suppuration. It can be Calcareous when it becomes hard and lime-like. We will take up the discussion of these in future chapters where they will be elaborated upon.

The action of the air in the lungs, to a modified extent, is similar to that of spraying the water into

the atmosphere. In fact, water acts as a general reserve for many elements necessary, and the dangers of undermining the natural vitality, by a depleted quantity of water in the system, are always constant. As a general rule most people drink less water than is advisable. (The various methods of drinking water to obtain their definite objects will be detailed in future chapters.) For instance, water must be drunk for food, also for diuretic purposes; as a laxative; for its osmotic action, and for its promotion of the generation of antitoxins within the body. (These purposes will be more elaborately described in connection with the particular diseases.)

Apart from the osmotic action, the diuretic action, and the promotion of the developments of Autogens, in disease, an excess of water in the blood enables this fluid to absorb and retain oxygen in excess. Oxygen is absolutely necessary in the combustion of tissues, and is especially useful in low grade fevers to promote sufficient tissue changes. Tubercular patients should be encouraged to drink freely of water—a very considerable amount of water and a very g r e a t deal of the benefit obtained from drinking excessive quantities of milk, as is practiced in Saranac and other Tubercular Sanitariums, is directly due to the increased quantity of water obtained from the milk. Observation of the blood in these case will reveal an increased amount of Hemoglobin (iron and oxy

gen) after a short period of excessive use of milk or water.

It must be kept in mind that while oxygen is a chemical element of water, yet water is capable of securing and retaining free molecules of oxygen among its own molecules and in this way, oxygen, to a large extent, is absorbed by the blood. In fact, it has been estimated, that sixty-two per cent. of the bulk of the blood is gases, of which oxygen, either free or combined with carbon, constitutes almost ninety per cent. The marked emaciation and pallor that rapidly follows deprivation of water indicates somewhat the importance of water in the blood. In disease, where there is actual derangement in the blood itself, and not infrequently are the germs of disease actually found in the blood stream, combustion is very essential, and this combustion is most efficiently promoted by liberal injection of water. In fact, it should be the routine practice, of every physician, in all fevers to flood the Ascending and the Transverse Colons in order to be assured that this human reservoir is copiously supplied with this vital fluid.

CHAPTER V

Physical Facts Concerning The Human Body

Apart from the workings and functions of the various systems and organs of the Human Frame, the body possesses certain physical facts which are of the greatest importance in the treatment of disease and in the maintenance of health.

Prominent among these physical properties is the fact, that the body receives cold and radiates heat. Heat, up to a certain degree is essential for tissue activity. Below a certain degree cold will check tissue activity, and above a certain degree will entirely destroy the tissue. Therefore, in order to maintain a fairly good normal activity in the tissues of the body, a certain degree of temperature must be maintained. The usual temperature considered as normal is 98½° Fhr. in the armpit, 99° Fhr. under the tongue, and 100 to 100½° Fhr. in the rectum. The blood temperature, of course, is relatively higher and has been approximated at about 103° Fhr. normal. This is also the usual temperature of the urine.

Nature is greatly assisted in maintaining bodily heat in a cold atmosphere by the condensed air containing a relatively larger amount of oxygen, the increased oxygen affording increased combustion

of the tissues. This explains the sense of exhilaration upon going into a cold atmosphere and the sense of exhaustion or lassitude upon entering a heated room after exercise in the cold. The same condition is true in a hot atmosphere, the rarefied air, affording a diminished amount of oxygen, checks combustion and prompts a sense of lassitude. In conditions of increased perspiration the cooling processes of evaporation are increased. Recent experiments show that the human body has a decided magnetic power. This has been demonstrated recently, by a French Scientist. However, the therapeutic value of this fact has not as yet been arrived at.

The maintenance of bodily heat is of more importance in the advanced ages. After maturity the processes of the tissue changes are on a decline, and as a consequence tissue combustion is progressively retarded. The aged must be protected against too great a deviation from the normal temperature. This is equally true of the heat as of the cold. The aged should avoid strenuous exercise and excessive heat, and afford opportunity for fairly rapid evaporation by wearing light clothing during the heat, as well as avoidance of exposure to cold by the use of woolens during the severer months of the year.

The diffusibility of gases plays a very important role in the physical and chemical changes within the body. The contents of the blood have been

variously estimated as being gases up to about sixty per cent. of its bulk. In the process of combustion, the blood and the various secretions are deprived of free oxygen, and there is an excess of unsatisfied gases of which Carbon-dioxide and monoxide is prominent. In the lungs the excess of unsatisfied gases is brought in contact with the oxygen and nitrogen of the air, and most of these gases are readily combined with the two gases of the atmosphere. The increased amount of oxygen gives the arterial blood coming from the lungs its bright color, in contrast with the darker color of the venous blood before it has been exposed to the air in the lungs. While the changes are chemical, the basis of this chemical change is physical and its effects are physiological.

Another element of the Human body is the Osmosis of its Fluids. This Osmosis is very important in the treatment of disease, and I confess it is the basis of many of my theories of Therapeutic Measures. The Law of Osmosis is:

> "When two fluids of different density or weight, are separated from each other by an animal membrane, there is a movement from the heavier to the lighter and from the lighter to the heavier to equalize their density or weight. The Osmotic pressure of the heavier being more than that of the lighter, the greater pressure is from the heavier to the lighter."

This Law has been commonly demonstrated by the simple procedure of filling two jars with water, one containing sugar and the other nothing but distilled water. These are separated from each other by a toughened animal membrane, such as we find on the head of a drum, and while this membrane is practically waterproof, yet after exposure for several days, examination of both fluids will show them to be identical in character, both containing the same proportion of sugar and having the same specific gravity. This Law of Osmosis is not exclusive to animal life. Plants obtain their moisture from the ground thru Osmosis and throw off much of their waste in the same process. However, it can be readily understood that a live soft membrane will much more readily afford an active Osmosis than will the tough membrane described in the laboratory test. This Law of Osmosis cannot be too greatly emphasized. Food, being heavier than the blood, gains its admission into the bloodstream and into the lymphatics, to a large extent, thru the Law of Osmosis. Again, waste materials from the blood find their entrance into the stomach and intestines by the very same processes, when the stomach and intestines are empty or contain a lighter fluid than the blood. Thus it can be seen that the drinking of large quantities of water in the early morning on rising, by Osmosis of the blood to the water in the stomach, affords

excellent drainage of the waste material of the blood into the Alimentary Canal.

It has been extremely interesting to me to watch the habits of the domestic animals, when afforded the opportunity to follow their natural instincts in the field. Almost without exception, the horse or the cow upon arising will stroll to a neighboring stream and drink freely of the water before beginning to nibble on the grass. The custom of early morning drinking of water should be universally followed. The Osmotic action of water in the Alimentary Canal is one that affords great therapeutic value. The time and occasion of drinking this water depending entirely upon the object we wish to obtain, and in other chapters, when I speak of the various diseases, I will attempt to specify the time advisable to drink water in order to obtain the best therapeutic results.

The question has often arisen, whether or not actual structural contents can be transfused or seeped thru the animal membrane. I have never had opportunity to examine the fluids sufficiently to warrant my positive statement that such is a fact. However, as in the case of a woman washing clothes, where the skin assumes a whitened shrivelled appearance; it is my conviction that not only the red but also the white corpuscles are carried from the skin of the hands into the water in the washtub. However, it is more than probable that the actual structure of both the white and the red

cells are either so modified or destroyed that the microscope would merely reveal them in the shape of Granula Detritus.

It is not uncommon for the woman described to receive a superficial laceration of the skin and have no hemorrhage until the hands are dry, and the circulation affords a fair degree of blood to the skin. I am asking my readers to dwell a little upon this picture of the appearance of the hands of the woman washing clothes, to somewhat portray the extent that Osmosis will drain the blood from a part. It must be borne in mind, that the skin is a fairly compact thickened membrane in strong contrast with the loose thin mucous membrane that lines the stomach. With this picture in mind, the benefits of Osmosis in treating local affections of the Digestive Canal, such as Ulcers of the Stomach or Ulcers of the Duodenum, or in Typhoid Fever which in reality is an ulceration of the Glands (Peyers) at the end of the Small Intestine, can be somewhat understood. Its importance in inflammatory changes of the milder character, such as Catarrh of the Stomach or Duodenum, or Colitis, can be readily appreciated.

Keeping in mind the picture of the woman washing clothes, and the white shrivelled appearance of her hands demonstrating the absence of blood, it can be readily seen that the congested blood vessels in and about the affected parts, if exposed directly to the Osmotic action of water will seep into

the water and relieve the congestion. With the draining of the blood the contraction of the blood vessels is permitted, and opportunity for normal circulation is promoted.

In Eczemas and Elephantiasis the superficial layers of skin are softened thru degeneration, promoted by relieving the congestion, and a return to the normal healthy tissues is begun.

It must be borne in mind that with *the absence of blood in a part, the activity of an infecting germ is checked, and not infrequently the germ itself destroyed.*

By this method we drain off the suboxidized blood and afford opportunity for the oxidized blood to reach the part, permitting increased combustion which in itself is destructive to the infection.

Osmotic Treatment is a discovery of my own. In all of my investigations I have never been able to find any Hydropath, even among the early Romans, or the German School, who have even hinted at this means of treatment, and yet it is beyond doubt the most efficient means of correcting all alimentary and all skin lesions. Eczemas that have for years resisted all forms of medication have promptly responded to Osmotic Treatment. I have seen, even in advanced conditions of Elephantiasis (skin like an elephant) splendid results from its use, when persisted in. In Varicose Ulcers of the legs it is a remedy without rival, but the exposure to the water in these advanced cases must be con-

tinuous and prolonged. In cases of Elephantiasis the exposure should be at least ten hours out of the twenty-four; and one hour exposure in the morning in severe cases of Varicose Ulcers is usually necessary. In substance, the patient simply lies in a tub of bland water during this period.

CHAPTER VI

Physiological Functions

Generally speaking, all organs and all tissues consist of cells united by fibers which are termed inter-cellular substance. These cells are all characteristic of the organ or tissue, although they have certain characteristics that are common to all. They are differently shaped in different kinds of tissue, are encased in a membrane called the lining membrane, and contain an active nucleus. Frequently a cell will contain more than one nucleus. The cells vary in diameter from one, thirty-one hundredth to one, twenty-five hundredth of an inch, and are rarely larger. The active part of the cell is the nucleus, from which all cellular increase is derived.

The functions of all cell life are to absorb nourishment, eliminate waste, and to furnish material for growth. The secretion of the gland of which the cell is a part has practically no nutritive value, altho it may be highly essential in promoting nutrition.

Thus, it is with the bile, the fluid secreted by the liver with the pancreatic juice, the secretion of the pancreatic gland, etc. The individual cells of the individual organs, when the system is work-

ing in harmony, serve to prepare secretions that are beneficial and necessary for the general co-working and health of the entire system. A short description of the functions of the various organs in their relation to the general system will be helpful to some of my readers.

From a Hydrotherapeutic standpoint, it must be kept in mind that the fluidity of the secretion of every organ and every cell is water ($H^2 0$), so that primarily an insufficient supply of water results in a sub-normal excretion of the waste products. In other words, water is the solvent of every substance that enters into the human make-up. However, it must be borne in mind, that this water is used a great many times within the body before it is finally thrown off by the kidneys, skin, lungs or other excreting organs.

As an illustration of this: With every meal about one pint of saliva, which is over 99 per cent. pure water, is secreted by the Salivary Glands of the mouth and swallowed, where in the stomach it enters into the conversion of the starches into sugar. Again, while the contents of the stomach and Small Intestines are fluid, the stool contains but from three per cent. to five per cent. of water, showing that the water is absorbed in the large bowel and again enters into organic activity.

Water is eliminated from the system by the four avenues of excretion. The air being heated in the lungs, increases the intermolecular space or

vacuum, and prompts the evaporation of water from the air chambers. A moderate estimate of the amount of water eliminated from the lungs in twenty-four hours would exceed a pint. The noticeable loss in weight experienced in people moving from the sea-coast where the atmosphere is laden with moisture, to a dry, hot climate, is largely accounted for by the increased loss of water thru the excess of elimination by the lungs.

Approximately 96 per cent. of one's perspiration is water under all circumstances. However, the water content increases with the rapidity of elimination. Thus, is it that the water content of perspiration in summer is much greater (approximately 99 per cent.) than it is in winter. It is impossible to estimate any average loss of water thru perspiration. Some Authorities have put it as high as three pints in twenty-four hours.

The skin, however, is able to excrete more than this large quantity, as has been estimated in the Sanitarium in the case of the long, Hot Dry Cabinet Pack. It has been possible in a ten-hour exposure to eliminate in weight more than ten pounds (or pints) of water, making allowance for the scant kidney elimination during the long sweat. This does not mean that the patient has lost ten pounds from the sweat, but it does mean that the water he has drunk, which exceeded ten pounds, has been eliminated thru the sweat glands.

The third system of elimination is thru the kidneys. There is no standard of elimination thru the kidneys under usual and ordinary circumstances. The quantity eliminated by the kidneys is in almost direct proportion to the quantity of water taken into the system. This quantity eliminated by the kidneys varies from three pints to one gallon, and in an illness such as Diabetes as much as three gallons has been eliminated in twenty-four hours.

In reality the kidneys are the safety-valve of the blood, in that, by rapid elimination of the water from the blood, they lessen the volume of the contents of the blood vessels, and consequently the blood pressure.

However, it must be kept in mind that an organ in activity tends to continue in activity after the stimulation excited by the excess of water subsides. Thus is it a very splendid rule in all conditions of excessive blood pressure, to drink on an empty stomach, large quantities of water, which will result in excessive stimulation of the kidneys long after the excess water has been eliminated. In this respect water is a remedy without a rival.

The fourth avenue of elimination is the stool. Practically all the water that enters the system enters by way of the stomach. Unless the specific gravity of the stomach contents is sufficient to exceed the specific gravity of the blood in the gastric veins, practically none of the water in the stomach

is absorbed. This is true also in the Small Intestines. So that the contents of the stomach and intestines are, as a rule fluid. The propulsion of food and water thru the Small Intestines is quite rapid, passing thru the entire twenty feet of this small gut in from four to six hours, in contrast with that of the large bowel that usually requires from twenty to twenty-four hours in its passage thru its five or six feet. In the Ascending Colon, which in reality is the human reservoir, water is mixed with the excretory matter and the stool and is rapidly absorbed. Here the Osmotic pressure is practically always toward the blood, in contrast to the stomach and Small Intestines. In other words, the water content of the food when it reaches the large bowel will approximate eighty per cent., while the stool will contain perhaps only five per cent. of water.

It is impossible to approximate the amount of water necessary for the individual to drink. This is a matter that every one must decide for himself. However, it is logically reasonable that an excess of water should be constant in the Ascending Colon.

Foods generally are divided into Carbohydrates (starches, sugars, and fats), proteins (nitrogen compounds), inorganic substances (water and mineral salts).

The chemical formula of sugars is identical with the formula for starches, plus H^2O, or water. The chemical formula of fats is identical with that of sugar, plus water. Thus, it can be seen that water

adds to the bulk of the starches and sugar eaten.

The custom of drinking water during a meal is not injurious chemically nor does it interfere with the digestion in the stomach. However, it does *mechanically* interfere.

Nature has provided a fountain of fluidity in the back of the throat in the shape of the Salivary Glands, that impregnate water and Ptyalin (starch digestant) and facilitate the swallowing of dry, hard food. To drink water for the purpose of washing foods into the stomach interferes with the normal salivary digestion. Therefore care should be taken not to supplement solid food with mouthfuls of water.

On the other hand the drinking freely of water before a meal dilutes the acids of the stomach as well as moderates the fermenting activity of the bacteria, which usually swarm in the stomach, and, to a certain extent, carries these materials into the intestines before the entrance of food into the stomach.

The custom of drinking a glass of cold water ten to fifteen minutes before taking a meal should be encouraged, especially if it be accompanied by a few minutes' vigorous massage in the region of the navel. The purpose of the massage is to stimulate muscular activity of the stomach and a fairly rapid expulsion of the stomach content into the intestine, where the alkaline bile neutralizes the

acid stomach content, and checks the activity of the sarcinae and yeast bacteria.

The peculiar relief afforded gastric distress by bowel-evacuation is in reality nothing other than a reflex of contraction of the stomach from the expulsive movement of the bowel. Thus is it that drinking cold water on an empty stomach, through its laxative action on the bowel, excites contraction of the stomach walls, and relieves many of the symptoms of Dyspepsia.

The action of water on the proteid foods is largely that of a solvent. The function of the stomach is that of a churn. Its vibrations agitate the water and promote a separation of the proteids from the insoluble particles of food and also cause their suspension in water. Water does not enter into the chemical composition of the proteids in the Intestinal Canal. However, proteids, in the liver, are capable of becoming Glycogen (fat) and water undoubtedly enters into this change.

Inorganic salts of every nature, in fairly abundant quantity, are taken into the system thru drinking spring or reservoir water. Agitation of the water adds greatly to its powers to hold in suspension quantities of these universal salts.

In addition water is capable of absorbing oxygen from the atmosphere. Thus is it that running water has a "freshness" that is not found in water that has become stagnant. Considerable vegetable matter is also found in our drinking water.

Keeping in mind, in order to simplify matters, the division of foods into carbohydrates, proteids and inorganic substances, we should be able to understand Nature's efforts to prepare these foods for their ultimate use as nourishment for the tissues. In bulk, starch comprises the greatest amount of our food. The difference between raw and cooked starch is merely that, in the presence of heat, the starchy content of the cell has ruptured the lining membrane, and afforded free access of the digestive elements to the starch. Thus is it that the cooking of starchy foods is a step in the direction of digestion.

Civilized people accustomed to the eating of cooked foods, are generally incapable of digesting raw starch. The main digestive agent in attacking raw starch is the saliva. From chemical observation it would seem that the digestive power of saliva is in direct proportion to the usual amount of starch eaten. In other words, Nature accommodates herself to her demands. The South Sea Islander will thrive on raw starch and digest approximately five to six per cent. of it, while the average American man or woman, accustomed to eating (in the main) cooked starch, will be unable to digest even a small percentage.

"An apple a day keeps the doctor away" literally translated, means that raw starch is so foreign to the digestive ability of the stomach and intestines that Nature responds by her efforts to evacuate this

indigestible substance from the system. It is possible, however, by a thorough mastication and mixing with the saliva, to digest raw starch. Therefore, it is strongly advisable that all raw fruits should be eaten slowly and rendered liquid before they reach the stomach.

Cooked starch responds to the action of saliva. In the presence of moisture and the churning of the stomach, and in a neutral or alkaline medium it is converted fairly rapidly into sugars by the intermediary steps of maltose, dextrin and glucose. However, in the presence of Hydrochloric Acid, Ptyalin loses its fermentive power, until the food is converted into an alkaline medium by the action of the bile in the intestines.

Many physiologists contend that as high as forty per cent. of the cooked starch responds to the action of Ptyalin in the stomach. In this they are undoubtedly wrong, for glucose or dextrose—the finished product of starch digestion—is never found in the stomach test meal except in moderate amounts, while starch is ever abundant.

The secretion of bile into the upper intestine just below that portion of the stomach which we call the pylorus, and which in reality is the dividing part between the stomach and intestine, reestablishes an alkaline medium for the food, and with this medium the resumption of the digestive function of the Ptyalin. The Pancreatic Gland secretes a digestive fluid called Amylopsin, which

is mixed with the bile in the Common Duct that empties into the upper Small Intestines. Amylopsin is also a diastatic (starch) digestant.

The structure of cooked starch being destroyed, the microscope fails to reveal the characteristics of the cell in a ruptured state. On the other hand, raw starch or starch not sufficiently cooked to destroy the cell, is seen in abundance. In a well cooked starchy meal, such as boiled potatoes, mashed, it is practically impossible to obtain the iodine reaction in the stool, so that it can be readily perceived that the conversion of cooked starches into sugars is a pretty thorough process in the Small Intestines.

Sugar, in the form of Glucose, is absorbed in the Small and Large Intestines, carried by the Ascending Portal Veins to the liver, where it is converted into Glycogen (fat). From the liver it is carried by the Lymphatics thru the long Thoracic Duct, gradually entering the blood at the junction of the Thoracic Duct with the Descending Vena Cava (large vein). In the blood, Glycogen is attacked by the white corpuscles and further broken down, and, in addition, the red cells of the blood supply it with oxygen converting it into Plasma. Plasma is the ultimate of tissue nourishment.

Fats require practically no digestion. In fact, only a small percentage of fat is absorbed. Even such a fat as that found in mother's milk offers but minor nutritive value. Probably less than five

per cent. of cream is absorbed by the villi of the Small Intestine. In fact, even our blandest fats and oils are so foreign to the intestinal content that they act as laxatives. An illustration of this is the purgative action of olive and castor oil.

To what extent the preparation or digestion of protein is bacteriological and to what extent it is fermentative cannot be definitely decided. Swarms of bacteria are found in the gums, teeth, tongue and throat of the normal healthy individual, and in the process of mastication these bacteria are implanted in the proteid food. Most of these bacteria become inactive in the acid medium of the stomach, although sarcinae and yeast cells found in the normal stomach are exceptionally active in the presence of Hydrochloric Acid. These latter have practically no action on proteids, but readily attack the starches and sugars, generating alcohol. In the stomach, saliva acts as a solvent to the proteids and holds a certain percentage of them in suspension.

The early digestion in the stomach does not affect the proteids, however, the churning action of the stomach stimulates the gastric glands to secrete an enzyme called Pepsin, which, in the presence of Hydrochloric Acid, is capable of converting proteids into Peptones. What percentage of Hydrochloric Acid, found in the stomach content, results from the breaking down of the Chlorides, and what per cent. is actually secreted is still a

question of dispute among physiologists. Dr. Gane and myself are of the opinion that practically all of the Hydrochloric Acid found in the stomach is due to the breaking down of the Chlorides by the action of digestion. However, while Pepsin is capable of converting the proteids into Peptones in a neutral medium, its action is enhanced by the presence of Hydrochloric Acid.

The Pancreatic Gland secretes a digestant, Trypsin, capable in an alkaline medium, such as the bile, of further converting proteids into Peptones.

The proportion of proteids digested is much less than is generally supposed. Five per cent. of raw meat will be broken down by the average normal stomach and intestines. Even the albumen of the white of an egg is found to be largely beyond the action of Pepsin and Trypsin and much of it is thrown off as waste matter in the stool.

Peptones are absorbed in the Small and Large Intestines, and, like the sugars, are carried by the Portal Veins to the liver, and converted into Glycogen. Thus is it that the ultimate form of both carbohydrates and proteids is Glycogen, but the Glycogen obtained from the proteid source requires less oxygen from the blood, and consequently is more readily converted into healthy nourishment. Thus it can be seen that a diet largely of meat is much less prone to develop an excess of Glycogen (fat) than a diet consisting largely of sugars and starches.

The claims of certain dietitians that we derive most of our mineral salts from beneath the skin of the fruit and the vegetable are without foundation. The table salt we use, while largely composed of the chloride of sodium, contains a considerable quantity of calcium, magnesium and other salts. The blood of the meats, the juices of our vegetables and fruits, our drinking water, all supply liberal quantities of the mineral salts.

In fact, a very large percentage of our derangements in metabolism (tissue activity) is the result of excess of these mineral salts, and our object in dieting in such diseases as Arthritic Rheumatism (chalky deposits in the joints) and hardening of the arteries is to dissolve these salts and eliminate them from the human system.

Again, the most common benefit from the mixed diet is to establish an equilibrium of the presence of inorganic salts. The conditions that follow rapidly upon an exclusive meat and fish diet, such as Scurvy and Beriberi, are largely the result of improper equilibrium in the amount of these inorganic salts. This is one of the most important reasons for refraining from an excessive indulgence in proteid diet.

From a Hydrotherapeutic standpoint, nitrogenous foods (proteids) should be encouraged in those diseases where the supply of oxygen is depleted or interfered with.

In Pneumonia we have a diminished supply of oxygen, as also in advanced Tuberculosis. These conditions existing, the excess of protein does not rob the blood of its oxygen, as does the excess of carbohydrates. In Malarias, where the red cell has been destroyed by the Plasmodia and the oxygen content of the blood diminished, a proteid diet is indicated.

On the other hand, with full hemoglobin content of the blood and Rheumatic manifestations, the liberal carbohydrate diet is desirable. This condition is usually found after the age of fifty years. In addition, the carbohydrates, as a rule, contain various vegetable tannates, which have a stimulating action on the liver cells, and increase the excretion of bile, thereby drawing the waste material of the brain and nervous system, and checking the fermentation of the intestines.

The digestibility of the red and the white muscular fibers, as judged by the examination of the stools, indicate that there is practically no difference in their composition. The difference in color indicates merely the difference of pigment, except in the case of Kosher meat that is drained of its blood, for use by the orthodox Jews.

The result of cooking on the carbohydrates is largely due to the expansion of the starch (granulose) and rupture of the lining membrane (cellulose). Consequently, the effects of heat, whether it be by boiling or baking the vegetables and

fruits, are identical. This is not true, however, of the meats. The process of boiling loosens and softens the meat fibers, and renders the protein content more easily attacked by the gastric juices. Frying, on the other hand, toughens the fibers and enables them to resist digestion.

The lime content of eggs is especially abundant, while the egg itself furnishes a fruitful field for the putrefying bacteria in the intestines. These two factors place eggs in the category of being splendid food during early adolescence, and dangerous food past maturity.

CHAPTER VII

Technique of Water Treatments

The Cold Wet Pack

Very rarely, indeed, is it necessary or advisable to use the complete Cold Wet Pack. It should be used only in grave conditions, as its reaction may be so severe as to somewhat interfere with rapid recuperation from the disease. In using the complete Cold Wet Pack, spread a blanket across the table or bed and dip a sheet in cold water. Roll the patient rapidly in the sheet, with the blanket rolled outside. As a rule, patients fall rapidly into a soft, quiet slumber, due to restricting the supply of blood going to the brain. In cases where the exhaustion is extreme I have found it advisable to let the patient sleep until thoroughly rested. *The complete Cold Wet Pack should never be repeated.* In the event of a return of the Febrile Symptoms, a Local Wet Pack will usually be found sufficient.

With the complete Wet Pack, all febrile manifestations will usually diappear in from three to five minutes. The heart action becomes soft and regular, but somewhat sluggish in its force. Breathing will be shallow; cough will usually be corrected.

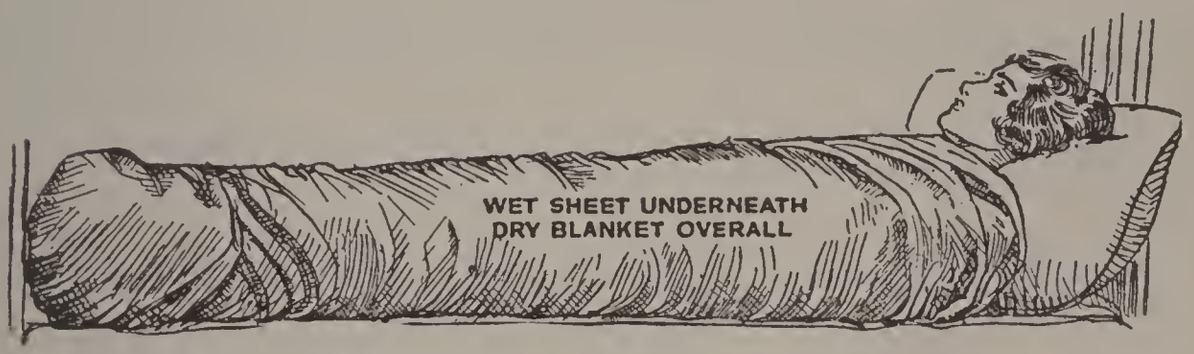
Free perspiration, as I have found in some of my cases, develops in from ten to fifteen minutes after the Pack has been applied, altho it is not infrequent to find the face free from perspiration because of the marked Osmosis and the perspiration of those parts exposed to the Pack. Because of the sweat, there is a fair degree of moisture in and about the Pack long after the water in the sheet has become vaporized.

The reaction from the application of the Cold Wet Pack usually appears within ninety seconds after application, and, instead of a chill, the patient experiences a sense of quiet and relief in that period.

Dr. Winternitz of Vienna and Dr. Guenther of Berlin placed much stress upon the action of the steam or vapor generated within the Pack. But while there is some vapor, it is not in sufficient amount to account for the coolness and moisture of the skin. My contention is that the moisture and coolness of the skin are but manifestations of the Osmotic pressure of the blood to the water in the sheet. Where the patient is not in the advanced stage of exhaustion warm drinks should be given when the Pack is first applied. But after reaction is established moderately cool water should be given freely—approximately a half pint every hour.

The action of the Cold Wet Pack is as follows. With the application of the cold water in the towel or sheet, Nature, by restricting the finer blood ves-

sels so that the blood will not be chilled, confines the blood momentarily internally, and as in physiological matters the reaction or, as we call it, the reflex action, is to reflex the finer blood vessels of the skin and permit the blood to come to the surface to overcome the cold. This is the same reaction that we have when a person faces the cold air. At first the face pales under the chill and is rapidly replaced by the rosy cheek and red nose. Excessive blood going to the face to overcome the chill of the cold air.



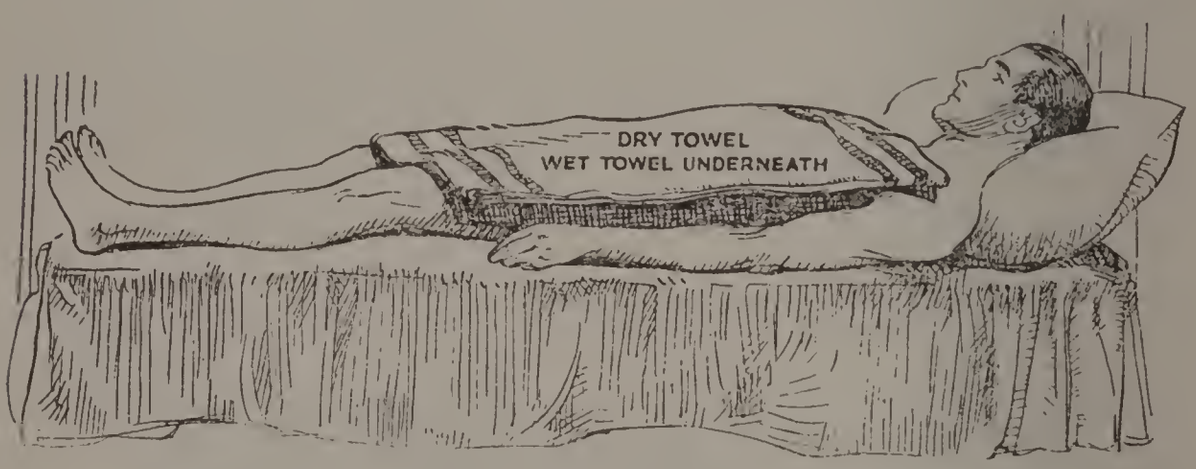
General Cold Wet Pack

With the return of the blood in increased quantities to the skin, we have, as the result of the increased heat, a rapid formation of vapor, that is the blood vessels rapidly give off their heat to the cold water, and vapor or modified steam is formed. In addition to that, the water being lighter than the blood, Osmotic pressure is exerted from the blood to the water so that we have a draining of the blood elements into the water in the pack.

In other words, the Cold Wet Pack relieves internal congestion by forcing the blood to the skin,

it drains off the blood by means of perspiration and Osmotic action, and affords the internal organs free opportunity of normal activity.

Thus it can be readily seen that the claim that all febrile manifestations will disappear within a few minutes with the use of the General Cold Wet Pack is not exaggeration.



LOCAL WET PACK
Showing position of wet and dry towels

THE LOCAL COLD WET PACK

As a general rule, the Local Wet Pack covers the throat, chest and abdomen, and is what we should employ in Pneumonia, Pleurisy, Bronchitis, Typhoid Fever, Peritonitis, Colitis and Gastritis. I have found the ordinary hand-towel, dipped in cold water, spread, dripping wet, quickly over the chest and abdomen and covered by a bath-towel, with the bed-clothes drawn up around the neck, to be ample. The Local Pack is less severe in its shock, more readily used, and can be repeated at

regular intervals with less reaction and less interference with recovery than the Complete Cold Pack.

The exposed area of the Local Wet Pack approximates about one-third of the Complete Wet Pack, so that the Osmotic drainage and perspiration more nearly approaches the accommodation that Nature has for deviation from the normal.

I have found that in the early stages of Pneumonia, with a temperature above 103 degrees, and with marked Cough and Cyanosis, it is advisable during the first six hours to change the Wet Pack hourly. After this every two hours will be found ample.

In Pleurisy it is advisable to change the Local Wet Pack at half hour intervals as long as pain exists. Frequently, however, the first application of the Cold Wet Pack will relieve the intense pain of the attack.

In Typhoid Fever the Cold Wet Pack, during the first three or four days, should be changed every two hours. After the first week, a night and morning Pack will usually be found sufficient. In Peritonitis, especially if it be Septic Peritonitis, the Pack should be changed every half hour until pain ceases, then at less frequent intervals.

Contrary to the teaching of Guenther and Winternitz, I advise against friction, such as massage or rubbing, following the use of a Cold Wet Pack. Nature is undergoing reconstruction and accom-

modation, and friction only increases the derangement by prolonging the congestion of the skin. After all manifestations of disease have disappeared, Nature should have ample opportunity without interference, to restore adjustment and accommodation of her blood supply.

Elaboration of technique in using the Cold Wet Pack should be avoided. The patient lying in bed is naturally apprehensive, and rapidity and simplicity of application is the main necessity. Needless delay only increases the apprehension of the sufferer, and may interfere with the good effect of the Pack.

It must be kept in mind that it is not the nature or character of the cloth or clothing of the Pack, —it is the water that is important. The Local Wet Pack, as applied to small areas, is rarely sufficient to meet the indication. For instance, the action of wringing out a towel in water and placing it about the throat in inflammatory conditions of the pharynx and tonsils, rarely is sufficiently radical to meet with any satisfactory results. In conditions such as these the Pack should cover not only the throat but also the chest and abdomen in order sufficiently to draw the blood away from the congested parts of the throat.

THE LOCAL HOT WET PACK

The sole indication of the use of the Local Hot Wet Pack is for the relief of pain. Its virtue lies

in the pain-reducing effect of heat. Yet it is so inferior in its action to the local or general hot bath in this respect that I have practically discarded its use in all conditions. In Sprains, Bruises, and Neuralgias the Hot Pack affords temporary relief. But I have found it far from satisfactory in comparison with the Dry Heat. The skin will tolerate a far higher degree of Dry Heat, than it will of that from steaming water. I have seen cases where the hair was singed by the thermolite lamp, yet the patient did not complain of the heat; whereas, water above 130 degrees is very likely to excite inflammation.

The general Hot Wet Pack should never be used, The General Hot Tub Bath must be applied according to the results desired. Where it is used simply for cleansing purposes, its duration should be brief and the temperature should rarely exceed 110 degrees. It should be followed by a cold shower or brisk rub to increase reaction.

It must be borne in mind that the reaction of the warm bath tends to draw the blood from the skin into the internal organs. So that exposure after a warm bath is always attended by dangers of internal congestion. When the general hot bath is used as preparatory to the Hot Dry Pack, the duration of the bath should approximate ten to fifteen minutes, at a temperature of about 120 degrees.

After this bath, and prior to lying between blankets, the body should be briskly rubbed with a coarse towel to maintain the blood in the skin until the warmth of the Hot Dry Pack has opportunity to promote sweating. As far as possible the entire body should be immersed in the water. It should be kept in mind that under the pressure of the water in the bath, the muscles of respiration have a certain amount of increased labor to perform in the act of breathing.

Few people recognize the enormous labor necessary to the act of respiration. The pressure of air at sea-level is about fifteen pounds per square inch. Therefore, the work required to fully inflate the lungs and overcome this external pressure will often exceed a weight-lifting effort of 200 pounds in the average man.

When we calculate that the average rate of respiration is about 18 to the minute, we can form some idea of the immense amount of labor necessary to furnish oxygen to the blood. Therefore, it is always imperative that we afford the patient free access to the fresh air. In the average bathroom, with the additional heat from the hot bath, the air is apt to become rarefied. Therefore, the prolonged general bath should be practiced with caution. In fevers it should never be used. The general hot tub bath is indicated mainly for treating local skin trouble. In general Eczema the Prolonged Hot Bath, frequently lasting an hour or more, is valu-

able for its solvent action upon the hard scales as well as its Osmotic action upon the inflamed skin. This should be followed by the Hot Dry Pack. The same is true in extensive Psoriasis.

In Insommnia resulting from excessive excitement or brain fatigue, the General Hot Tub, followed by the Dry, Hot Pack usually brings about the desired relaxation. In fact, all general hot tub baths of more than ten minutes duration should be followed by the Hot Dry Pack.

LOCAL HOT TUB BATHS

Whenever Osmotic action is desired externally, the Local Hot Tub Bath is indicated. This is especially true where there is any defect in the circulation.

In varicose veins, whether they be accompanied by ulcers or not, hourly exposure by sitting in a tub of hot water, followed by a brisk rub and a rest in bed, produces exceptionally splendid results. The pregnant woman during the latter stages of gestation should be encouraged to relieve the pressure on the veins of her legs by half-hour exposures in a Warm Tub Bath before retiring.

I have known even the most stubborn cases of Varicose Ulcers to respond to the prolonged Local Hot Tub Bath. Recently I was able to effect a cure of a bed-ridden patient—who had for fifteen years required the attendance of a nurse and physician—

by the simple procedure of a morning and afternoon exposure of the limbs to the Hot Tub Bath. Within three weeks the Ulcers, Eczema and Varicose Veins disappeared, and with apparently permanent results.

In hemorrhoidal conditions and Pruritus (itch) the hourly exposure to the Hot Bath usually meets with prompt relief, especially if preceded by the High Colon Irrigation.

Bruises and Sprains, especially if sustained after severe exercise or injury, are almost invariably relieved by a half hour exposure to the Local Hot Tub Bath.

The practice of exposing a feverish patient to the Cold Tub Bath cannot be too severely condemned. This custom has been practiced by many of our larger hospitals in the treatment of their typhoid fever cases. The shock and reaction from such an exposure is too severe in these conditions, for by the sudden driving of the blood into the internal organs, the danger from hemorrhage of the intestines is greatly increased. The same danger from hemorrhage is met with in Acute Pneumonia and Tubercular conditions.

The Cold Tub Bath should never be used except by people between the years of childhood and old age. It should never be indulged in, in the extremes of life. It should be of short duration and never be used in febrile conditions.

The sole indications for the use of the Cold Tub Bath are its cleansing and invigorating results.

In conditions of Hydro-bromidrosis (stinking sweat) the Cold Bath, because of its invigorating effects upon the skin and sweat-glands, is without a rival. This is especially true of the offensive odors from under the arms or the feet. Brisk rubbing of the skin, accompanying or following the bath, increases the invigorating effect of the bath.

THE GENERAL COLD SHOWER

Winternitz gradually displaced all tub treatment by the use of spray or douche, claiming that the friction of the water striking the skin added to the stimulation, and was in reality a form of massage. In addition, the fresh water had a greater cleansing effect than the tub. In my own work, I carry ever before me the idea of not interfering with the equilibrium of nerve control; and I attempt always to obtain results thru simple and gentle rather than radical efforts. I have seen quite marked exhaustion following the cold spray where the force of the water has been severe.

However, with the average healthy adult, the morning shower of from two to five minutes duration, accompanied by friction, is invigorating. The shock of the cold shower will be greatly modified by standing in a couple of inches of warm water, as reflexly, the exposure of the feet to warm water will cause a congestion of the skin and les-

sen the shock of the cold shower. In Hysteria, General Malaise and exhaustion the cold shower will prove stimulating and invigorating, but it should never be used in congestive and febrile conditions. Also, the hot shower bath should never be used in disease except for cleansing purposes. However, it can be used as a substitute for the Hot Tub Bath preceding the Hot Dry Pack.

THE ICE PACK

The Ice Pack may be used to secure three objectives. *First, it must be borne in mind that cold retards any bacterial or putrefying* activity. Second, *prolonged exposures to the ice destroys sensation.* Third, *the ultimate reaction from a prolonged exposure to extreme cold drives the blood from the exposed parts.*

Thus the use of the Local Ice Pack is of immense value in the treatment of conditions affecting those parts that are readily frozen thru, *such as the throat in Diphtheria.* Guenther obtained almost specific curative results by binding the throat loosely in a towel packed with cracked ice, and maintaining this Ice Pack over the parts for seventy-two hours. *Not only did ice check the inflammatory changes, stop the activity of the Diplococci of Diphtheria, and relieve the pain, but it always checked the reflex spasm and afforded complete relaxation from the spasm about the glottis and vocal cords.*

During my early practice, I treated acute Gonorrheal conditions with invariable success by maintaining the Ice Pack around the male organ, or within the vagina for from forty-eight to seventy-two hours. This treatment is almost specifically curative and clears up the condition in an incredibly short time.

ICE PACK
(CRACKED ICE, WRAPPED IN TOWEL)

The custom of applying the Ice Pack to the head in congestion of the Meninges cannot be too severly condemned. Bone is a very poor conductor of heat or cold. Therefore, it is practically impossible to reach the brain thru a prolonged exposure to the Ice Pack. Under these conditions the general Cold Wet Pack, by drawing the blood to the extensive surface of the skin, very effectively reduces any congestive inflammatory condition of the brain or spinal cord.

The attempt to correct so-called Appendicitis by the application of ice over the abdomen is farcical. The appendix, being protected by thick layers of gut, omenta, fascia, muscle and skin, cannot be frozen, and the benefits resulting are merely those that would be arrived at by the use of a small local Cold Wet Pack.

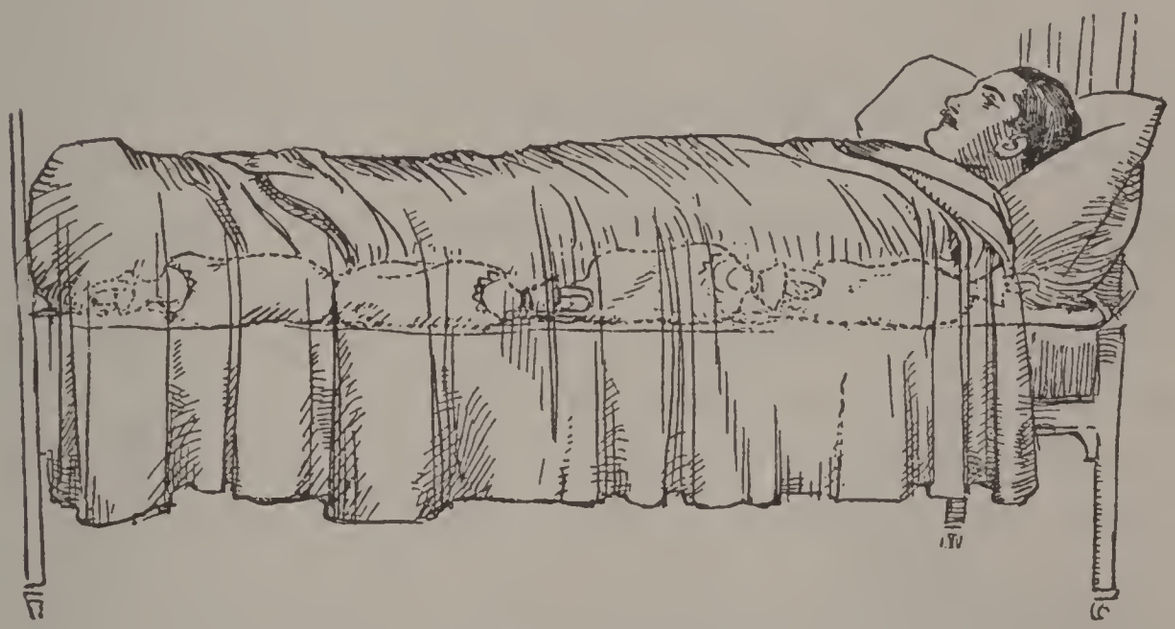
THE HOT DRY PACK

Probably this means of cure is used more than any other by the general public. In America it is the almost universal custom to correct a cold by producing a sweat in a warm bed accompanied by drinking copiously of hot lemonade or a hot toddy.

The Hot Dry Pack varies in duration as well as in intensity. The object to be obtained must be the guide for this duration and intensity. For instance, the average cold will be relieved by the ordinary sweat for two or three hours, while it may be necessary to sweat the patient for ten to twelve hours to eradicate Syphilis.

Hydrotherapy must, first of all, be simple, and must be met by those means that are at hand, so in the treatment of ordinary conditions we must resort to those means usually found in the average home. The object of the Hot Dry Pack is to produce sweat and thus drain off infection and internal congestion. The extent of the sweat must depend on the object we wish to secure. Primarily, all Hot Dry Packs, where possible, should be pre-

ceded by a Hot Tub Bath of moderate duration. Because of the chill produced by the sheets, it is advisable that the patient rest between soft blankets. In addition, the woolen blankets more readily absorb the sweat. The bed or table should be covered, by a soft blanket. When the patient is covered, bottles containing warm water should be placed about him and then another blanket should be wrapped around him. During the Hot Tub Bath



HOT DRY PACK
Showing hot water bottles between blankets

the patient should be given warm drinks. After perspiration begins, however, moderately cool water best meets the indications. When the sweat is fully established the windows should be opened in order to give the patient free access to the air.

This Hot Dry Pack given in bed is most adaptable to the treatment of young children. In the initial stages of all eruptive diseases and of con-

gested conditions of the chest it is ideal. In fact, accompanied by copious injection of the bowel, the routine practice of giving a child the hot sweat in bed will meet more than ninety per cent. of the indications in children's diseases. It will hasten the appearance of such eruptive diseases as Measles, Scarlet Fever, Chickenpox, Cowpox and Smallpox. It will lessen the congestion and frequently cure Bronchitis or Pneumonia.

If, however, as is frequently the condition at the onset of disease, the child vomits, it is strongly advisable to cleanse the stomach either by having the child vomit considerable quantities of water or by washing the stomach by means of the stomach tubes.

It must be constantly borne in mind that with infants there are fewer Antitoxins or Autogens in the fluids of their bodies and the onset of children's diseases, or better, the shock of the onset of children's diseases, is of more grave consequence than it is in the adult, (whose fluids are charged with Antitoxins, and the onset necessarily is more gradual,) and prompt measures should be taken to avoid the consequence of infection. As a safe general rule when a child manifests sickness, wash out the bowel thoroughly, give the child plenty of water to drink and put it to bed with the Hot Dry Pack.

The custom of using hot bottles such as soda-water bottles or beer-bottles has an advantage over

the rubber bottle. Glass, while a poor conductor of heat, will discharge heat much more readily than will rubber. Both, as a rule, are non-conductors of electricity. While again it is much more convenient to find empty bottles around the house than is is a hot water bottle.

The duration of the Hot Dry Pack should be at least one hour, at a minimum. The custom of putting the child to bed with a hot drink to start the sweat, letting the bottles grow cold of themselves, and allowing the child to sleep out the sweat, is a good one. However, the anxious parent is too apt to stop giving the child plenty of water to drink when emesis or vomit occurs. This vomit may be the very means of correcting the decomposition in the stomach, and may be nothing other than Nature's efforts to correct the infection. The parent should put little or no importance upon the gravity of free vomiting on the part of the child.

The Hot Dry Pack in adults is excellent, especially in advanced years. There is practically no shock and no depression accompanying or following the use of the Hot Dry Pack. Most of the ailments attributed to Old Age come from the lack of organic ability to meet the demands. The Rheumatism of Old Age is largely due to the inability of the liver and the kidneys to eliminate the waste products of tissue changes. The Weekly Sweat accompanied by the Copious Drinking of Water, with a High Colon Irrigation, enables Nature to

unload a great deal of this surplus waste material and relieve the overtaxed kidneys and liver. While again the draining of the blood into the finer vessels of the skin relieves the blood pressure and the tax upon the heart and lungs.

The custom of the Hot Dry Pack following the Hot Tub Bath, with a High Colon Irrigation and sleeping between blankets packed in hot water bottles so as to produce copious sweat, *is one that will add years to the life and comfort of people in their advanced years.* This is especially true of those who have engaged in occupations that have excited excessive perspiration. The retired farmer or mechanic, accustomed to strenuous exercise which excited perspiration, in his advanced years being unable to obtain the same elimination by the skin that formerly was his, throws an extra tax upon the kidneys and liver. Such people can do much to relieve this strain by a weekly use of the Hot Dry Pack and a copious sweat.

In pulmonary conditions the Hot Dry Pack for Children is useful, but for adults it is so inferior to the local Cold Wet Pack that I do not recommend it.

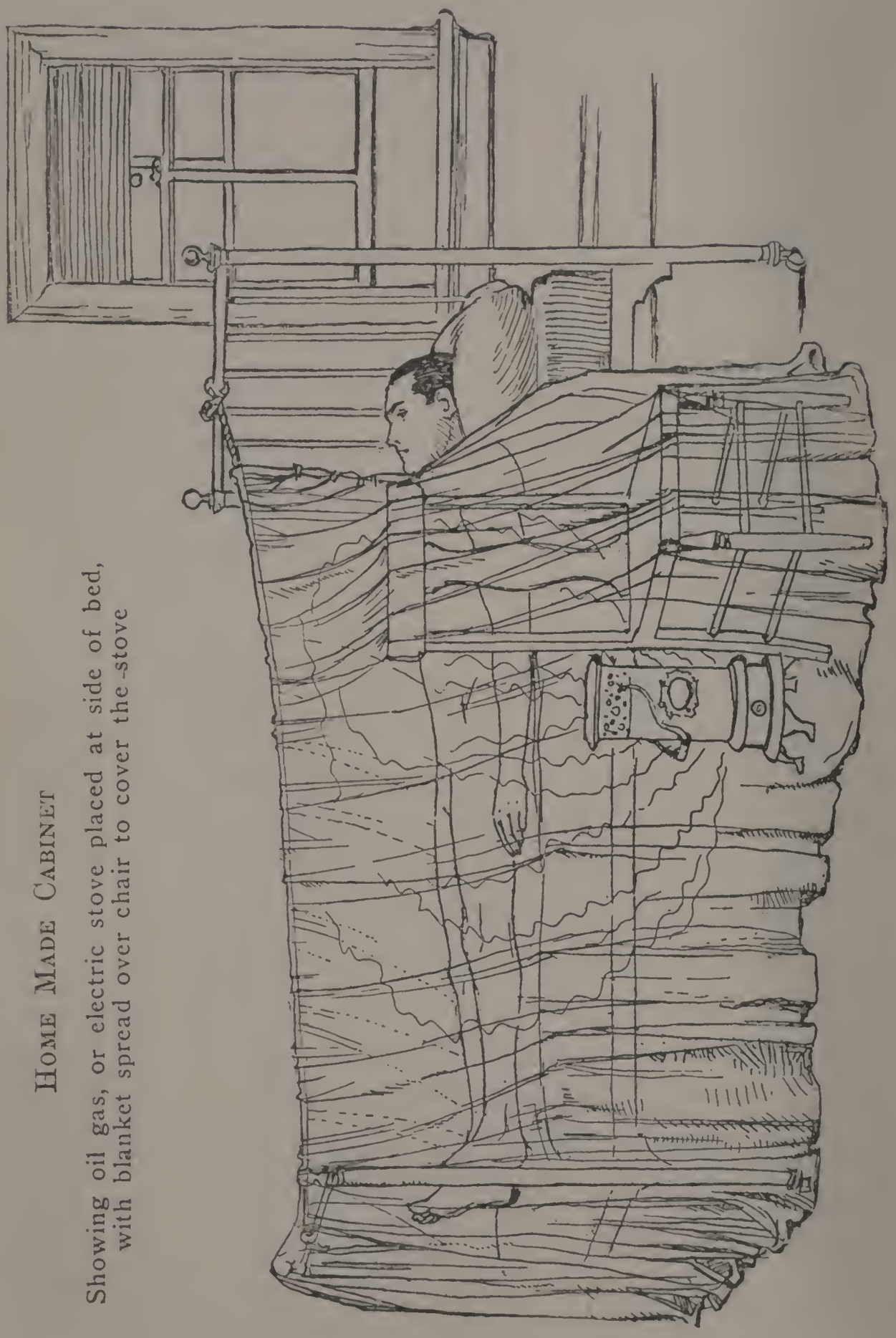
In mild Rheumatism the repeated Hot Dry Pack will be found very efficient. This is especially true in old people. In Urticaria, due to excessive sweat, draining off the irritating substance in the sweat, will afford relief.

In summing up the use of the Hot Dry Pack, it must be kept in mind that free access to the air must be given. The same results cannot be obtained in the Turkish or Russian Baths, due to the impurities and heat of the air throwing an additional tax upon the heart and lungs.

THE HOT DRY CABINET PACK

When we produce intensive sweating, as in the Turkish and Russian Baths, by means of the hot dry room or hot steam room, we throw increased labor on the respiratory and circulating systems and rapidly produce exhaustion. On the other hand, when we give free access to fresh air, either by the open window or by the tube and funnel exposed out of doors, there is practically no depletion from even excessive sweating such as we produce in the correction of Tuberculosis, Rheumatism and Syphilis.

In Guenther's clinic these prolonged sweats were given on the open porch in moderately cool weather, and the patients experienced practically no fatigue from an eight hours exposure. In fact, many of them expressed themselves as greatly refreshed during the sweat. As a rule, in these prolonged sweats the patient will sleep peacefully. However, it is very essential that they drink water at fairly regular intervals to facilitate elimination.



HOME MADE CABINET

Showing oil gas, or electric stove placed at side of bed, with blanket spread over chair to cover the stove

The hot air electrical cabinets are now practical in the home as they can be folded and occupy little space.

In treatment of inflammatory conditions of the kidneys, where the object is to remove chemical toxins thru the skin and thus relieve the kidneys, the sweat should not be intensive, but should be prolonged, in order to enable the kidneys to recuperate from their diseased condition. In marked Uremia (stupor a seventy-two hours exposure to the moderate Hot Cabinet Pack meets with best success.

Before entering the Hot Cabinet Pack, the High Colon Irrigation should be used to insure rest in the intestines. This should be followed by fifteen minutes in the warm tub bath. Then, without drying, the patient should enter the Hot Cabinet pack.

Where the exposure exceeds four hours in duration, the patient should be given equal parts of milk with cool water, instead of plain cold water. This will afford simple nourishment and offset the fatigue of the prolonged sweat.

In Malarious conditions the sweat should be active, and of from four to six hours duration, followed by ten hours rest in bed. To insure complete elimination of the Malarious infection it is advised that the patient submit to several repeated exposures of the Hot Cabinet Pack. In Rheumatism the exposure to the Hot Cabinet Pack should rarely exceed three hours, but should also be repeated

several times. In eliminating Syphilis in Guenther's clinic, we persisted in the exposure twice weekly, for a ten hour duration, maintaining a most active sweat during this period. I am quite convinced, from experience with many hundred cases, *that this treatment is practically specific in Syphilis.*

In Pulmonary Tuberculosis a five or six hour exposure, twice weekly, until the patient has had six to eight exposures, is advisable.

Contrary to Winternitz and Guenther, who terminated the sweat by a vigorous massage and rubbing of the skin, my custom has been to withdraw the heat and let the patient rest, until complete reaction has been established. During the prolonged sweat provision must be made for the possibility of the patient requiring to void urine. However, with the prolonged sweat this is usually not necessary.

BATHING

I begin this discussion on bathing with the simple statement that the human being is not amphibious. In other words, water in the shape of bathing is not essential to his health and well-being. It is merely the means of arriving at an end.

We must appreciate that water has a mild solvent effect upon all animal tissues. The tough hardened leather hide becomes soft and pliable when immersed in water and to a greater or lesser

extent the scaly or superficial portions of our skin are loosened and washed away by the use of bathing. As a consequence, therefore, the throwing off of this dead tissue is more rapidly arrived at, with the result that Nature is encouraged in her effort to throw off waste material thru the skin; and, as a result, the Sudoriferous Glands of the skin can more readily throw off their secretions. To a very modest extent the fatty portions of the secretion of the skin glands are likewise affected, with the results that the secretions are of less density than they would be otherwise.

Water is not the only medium that removes the waste superficial portions of the skin. The Arab buries himself in the sand, has a sweat and a sand rub, and probably has a greater degree of cleaniness obtained than do we of the Anglo-Saxon race.

It must be kept in mind that the secretions of the skin frequently are fairly strongly acid, in which lactic acid is the most prevalent; and the use of water locally to the skin readily dilutes these acids, resulting in a sense of relief sometimes described as "feeling clean." This sensation has also been described as being stimulating. Bathing as a rule is exhausting, not stimulating. It is soothing, not invigorating for the very reason that the immersion of the body into the water prompts Osmosis, draining the blood into the water. From the fact that the specific gravity of sea-water is less than that of fresh water, the Osmosis is necessarily

much less than it would be in fresh water. It is a common thing to have people prefer bathing in the sea rather than in a lake, because of the fact that they feel much less fatigued.

In weighing the benefits of bathing, it must be borne in mind that we control, to a somewhat greater degree, the supply of nourishment, than we do the elimination of the waste products of tissue changes, and that which promotes elimination in a moderate way is to be encouraged. Bathing, especially in sweet water (fresh water) as a routine is to be encouraged. Much of the languor and decrepitness that is experienced by those deprived of the use of bathing is due to the lack of elimination thru the skin.

The vigor of the Nations that encourage routine bathing, or the families that bathe as a routine event, contrasts very favorably with those that do not follow this custom.

SEA BATHING

If there be one special benefit derived from sea-bathing, I would name it as being the effects upon the brain and spinal cord. In the erect position, such as in walking, standing, or running, or when rowing or paddling, there is always a jar to the brain and spinal cord, due to the fact that the weight rests upon the buttox or the feet, and the jar is transmitted along the spinal column and base of the skull. However, in the swimming position

the body sustained by the buoyancy of the water, practically all of this jar is removed and exercise is indulged in without the irritation and disturbance to the nerve centres, which generally, follows other violent exercise. Again, the ligaments and the attachments to the spinal column are constantly being jammed together thru the jar and weight put upon the spinal column. Therefore the exercise of swimming, either by the over-hand or breast-stroke, permits the stretching of these ligaments and attachments.

At the sea-level we find the air at its greatest density, and consequently the oxygen content the highest. This affords better opportunity for the lungs to obtain the necessary gases with less effort, and the result of this is not only direct upon the blood, but also affords the heart and lungs much rest, in that they do not have to labor in order to meet the demand for the supply of these gases.

It is a common thing to hear people say that they feel so much better at the seashore or in taking an ocean trip. This is especially true where the persons have their blood affected and their oxygen-carrying ability depleted thru the ravages of Malaria or Anemia. In fact many of the diseases we find in the fall months of the year, such as Aestivo Autumnal (Malarial) Fevers, indirectly owe their origin to deprivation of oxygen in the blood.

In subtance, the benefits of sea bathing are:

1. Encouragement of elimination.

2. Increase of oxygen in the blood, with resulting rest to the heart and lungs.

3. Relaxation of the spinal ligaments when exercising, accompanied by absence of the jar to the spinal column that we have in walking, running, rowing, etc.

4. The stimulation of the vital powers that comes with the increased oxygen, and the reaction which results in quieting or soothing of mental unrest. (The confines of a ship compare very favorably to the confines of an asylum or prison. It is a well recognized fact that insane patients thrive better in an asylum near the sea than they do in the mountainous regions).

The duration of the sea-bath depends upon the idiosyncrasy of the bather. Most people have a powerful rapid reaction to sea-bathing, and as a consequence feel a sense of exhaustion after a few minutes exposure. Others can remain in the water much longer with no sense of weakness. The guide for the duration should be the sense of weakness. The plunge is frequently sufficient. However, some people can remain in the water several hours with no bad results.

One of the gravest results of sea-bathing is the exposure of parts, that have been protected against exposure by clothing, to the sun. The custom of lying in the sun on the sand in a bathing suit can-

not be too vigorously condemned. Death has occasionally resulted. The close relationship between extensive burns and Pulmonary Tuberculosis is well known to the Medical Profession. There is a close relationship between these two organs, that is, the skin and the lungs, and Pneumonia or the early stages of Tuberculosis of the lungs, are not uncommonly caused by sudden prolonged exposure of the body to the sun.

The best time to bathe in the sea is before the bright sun in the morning, or in the cool of the afternoon. A loaded stomach, that is shortly after a meal, when the blood is congested in the veins of the stomach, is an unfavorable time to take a prolonged bath as the skin naturally responds to the effects of the bath, and drains the blood away from the stomach to the surface of the body, interfering with the process of digestion. Consequently, a prolonged sea-bath should not be indulg ed in for at least one hour after taking a meal.

The evils of sea bathing are,

1. The exposure to the sun with its depleting effect.

2. Exhaustion being too profound following the immersion.

3. The secretions of the skin being acid, not infrequently the alkalines in the sea-water too readily neutralize this acid, which results in an irritation of the skin. (Much of this latter result can

be neutralized by the fresh water shower or immersion in fresh water.)

4. There are a great many people who suffer from visionary vertigo in the presence of a large body of water with the result that they become fearful and frightened when entering the water. If this fear is not readily overcome by gradual contact with the water it is advisable for these people to abstain from sea bathing unless their occupations are such that they are in danger from drowning. (It is a notorious fact that sailors, as a rule, are poor swimmers and our Navy makes it a compulsory rule that the seamen have swimming as part of their training.)

Summing up the entire question of sea bathing, the individual must know his own sensations and results from the sea bath. Most people enjoy a sea bath. Needless to add that the young and the old must only have moderate indulgence.

FRESH WATER BATHING

Where the fresh water bath is taken at an elevation, there is naturally less oxygen in the atmosphere than there is at the sea-level. However, water either as a fluid or a vapor has an affinity for oxygen and the refreshing effect of the mountain lake is largely due to the fact that the oxygen content is greater in and about the lake than otherwise.

The buoyancy of fresh water is less than that of sea-water because its density is less. Consequently it requires greater effort to swim and float in fresh water, and although the tides are not prevalent in fresh water, the exhaustion, as a rule, becomes more rapidly evident than in the sea water. The same principles apply to the use of fresh water that do to salt-water bathing.

Fresh water bathing is especially beneficial to certain conditions very common to women. In conditions of varicose veins, where the water is not chilly, the benefit obtained by lying on the bank with the water flowing up to the waistline cannot be exaggerated. The same is true in Hemorrhoidal conditions, which are nothing other than a local varicose vein. It is advisable in these conditions to have the position as near horizontal as possible in order to afford better return of circulation of the blood.

In Rheumatic conditions affecting the knees and the joints of the feet and ankles, the water being not too cool, the results are splendid. In burning, strong-smelling feet this exposure for several hours, drains off the congested condition of the glands of the skin and loosens the outer layers and waste skin tissue.

In those conditions where we wish to obtain a prolonged bath of the abdomen and lower extremeties, it is advisable that the chest-wall be not exposed to the water. The reason of this is because

of the fact that the pressure of air is much less than the pressure of water, and when we have the chest well immersed in water we have the respiratory muscles do just so much more work in order to create a vacuum within the chest cavity.

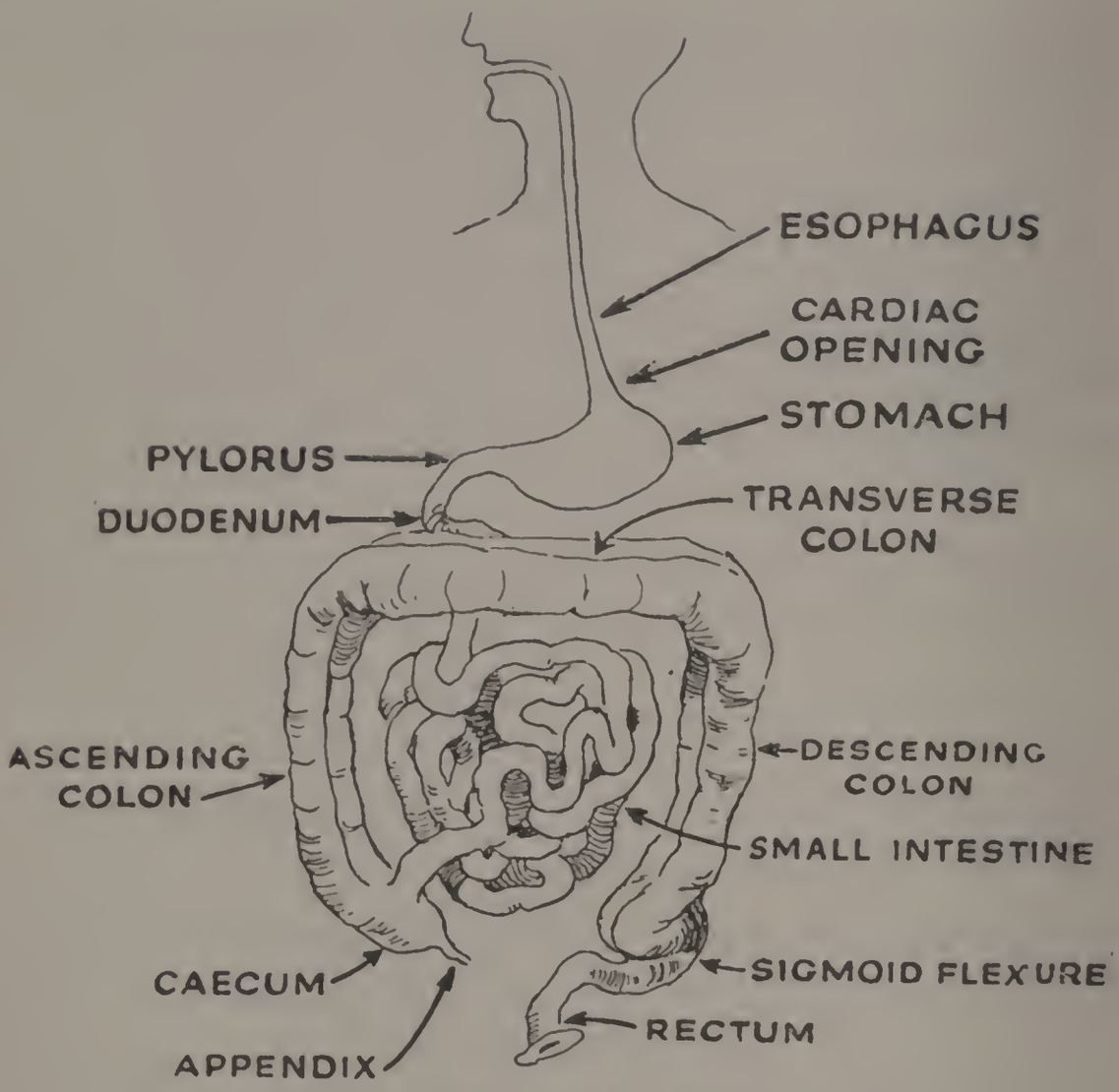
In Varicocele, which is also a condition of Varicose Veins, much benefit will be obtained by lying prone in warm water for one or two hours at a time.

Local Eczemas and local Ulcers which frequently accompany Varicose Veins, will be greatly benefited by the daily bath.

In other words, the ideal sitz bath will be at the lake or brook-side with fresh air and opportunity to lie on the bank, and all the benefits of the sitz bath can be to best advantage obtained in this way. The dangers from the sun seem to be less about the lake or brook, possibly because of the increased shade, than about the sandy beach. However, it is wise to use the same precaution in bathing in fresh water that we use in bathing in salt water.

Restraint from bathing because of physical irregularities, if the water be warm, need not be practiced. There is no reason why a moderately healthy woman should not bathe at any time, provided the water be not too chilly. This restraint, infrequently, has found its origin in the close relationship between the nerves of the feet and nerves of the pelvic organs, and it has been carried out too extensively. In the Samoan Islands the cus-

tom of daily bathing under all circumstances is practiced, and no undesirable effects have been observed from the bath. In fact, it should be encouraged because of the sedative action of the bath. Infrequently, it is a fact, that, the nervous condition of most women at these periods is quite excitable, and the prolonged warm bath is sedative in its action.



The Course of the Alimentary Canal

CHAPTER VIII

Water in the Digestive Tract

It is more than probable that this simple Work will find its way into the hands of many who are not familiar with the anatomy of the Human Frame, and I am asking any such reader who is not familiar with the structure of the human body, to consult this simple diagram in order to have a picture in his mind of the course of the alimentary canal. In addition to the rough draft of the canal,

it should be kept in mind, generally speaking, that we have four coats of tissue thruout this canal. From without inward, we have a thin vicid membrane which we call the serous coat; inside of this are two layers of muscular coats, one of which runs parallel to the canal and is capable of shortening the length, and another coat which runs around, called the circular, which is capable of contracting and closing the lumen of the canal.

In the stomach, however, there are a few fibers that run obliquely across, in addition to these two coats. Within the muscular coats is a loosely formed membrane called the sub-mucous, and resting upon this sub-mucous is the mucous covering, somewhat similar to the covering of the lips and gums. The glands of the stomach and intestines are found largely in the sub-mucous, with ducts emtying thru the mucous membrane.

It must be remembered that while the Esophagus Stomach, Small Intestines and the Large Intestine comprise the main portions of the Digestive Canal, the Functions of the Liver and the Pancreatic Gland are so closely allied with the Digestive Tract that in reality they are parts of the same system. In addition, do not forget that the net-work of veins in the stomach are very important adjuncts to the Digestive Canal.

In the Digestive Canal water has a great many important functions. It is a food, a lubricant, a solvent and a chemical ingredient. It is also a

diluent and is capable of exercising local and remote physical and physiological action. As a food, water enters into the actual chemical and physical constitution of digesting food. To those not familiar with the changes, I would say that starch plus water is converted into sugar; and sugar plus water becomes Glycogen or fat. For the purpose of adding bulk to the starches, Nature secretes by her salivary glands approaching a pint of saliva with each meal, which is swallowed during and after the meal and which contains the ferment called Ptyalin, which in turn promotes in an alkaline or neutral medium the conversion of starches into sugars. This saliva is in excess of ninety-nine per cent. water, and this enters largely into the formation of sugars and fats.

The fluid in our joints is over ninety-six per cent. water. In cases of disease such as Mumps, where the flow of saliva is checked, the swallowing processes are decidely modified and require water or fluids to lubricate the food. Over seventy-five per cent. of all the foods passed from the stomach thru the pylorus into the intestine is fluid held in suspension by water in modified form.

Every secretion in the human body is solvent in water. In fact, the basis of every secretion and every excretion in the human body is water. The fruit, vegetable and the proteid juices are solvent in water when modified by the digestive ferment in the stomach and intestines.

All food ultimately reaches the blood in the form of Glycogen whether its origin be proteid (animal), such as milk, eggs and meats, or carbohydrates, such as vegetables, starches, etc. and glycogen will approach eighty-five per cent. of water. So that water, not only physically, but chemically, enters into the fermentation of food.

For the specific results of water in the Digestive Canal, certain definite rules must be remembered. For instance, where we wish to add to the bulk of our meal it is advisable to drink freely of water fifteen or twenty minutes before meal-time. This enables the water, on an empty stomach, to reach the human reservoir of the Ascending and Transverse Colons and supply the water amount of fluid to the Salivary Glands. It requires no stretch of imagination to recognize that water coming from the Salivary Glands impregnated with the digestive ferment Ptyalin, is superior to water drunk as a means of washing the food into the stomach. In this respect it is wise to keep in mind the necessity of impregnating the food with the saliva so as to secure a proper combustion of the starches in the stomach. Drinking water with the meals hurries the food into the stomach and lessens the demand for the secretion of saliva.

Drinking water before meals has also additional effect. It dilutes the acid, diffuses bacterial de-

composition and renders the stomach more bland to receive the food.

It must be remembered, that the contents of the stomach when not consisting of food, are normally either neutral or slightly alkaline, and Ptyalin is only active in a neutral or alkaline medium. The acid flow of the stomach is a late manifestation of stomach digestion, and with its appearance the conversion of starches into sugars is checked. Thus it can be readily recognized that not infrequently can the cause of emaciation be traced to drinking water in order to wash down the food, rather than drinking water several minutes before meals.

Fortunately the custom of placing a glass of water on the table before the order for the meal is given, is almost universal in our hotels and restaurants. This somewhat meets the indication, altho the time afforded before eating is scarcely sufficient. The average business man should immediately drink this glass of water, and, in order to promote its rapid expulsion into the intestine, should slip his fingers inside his vest and massage his stomach vigorously for several minutes. (Massage of the stomach will be more elaborately described in a future chapter.)

Water varies in its action in the stomach and intestines in accordance with its specific gravity. It can be readily understood, that the solvent properties of water secures its rapid entrance into the

consistency of the stomach or intestinal contents, if drunk when the stomach contains food. In this way its specific gravity may be heavier than the blood, and in that event the Osmotic pressure would be opposite to what it would be were the stomach empty, and the specific gravity of the food exceeded that of the stomach contents.

The temperature of water modifies the effects. In other words, warm water soothes and quiets the peripheral nerves in the membrane of the stomach; while cold water irritates and stimulates these nerves. Thus it is that the physiological action of hot water and cold water in the stomach are practically opposite to each other.

In the empty stomach, warm water excites Osmosis, dilutes the products of fermentation and somewhat lessens the activity of the yeast and sarcinae bacteria. (It must be borne in mind that these bacteria have practically no activity in a neutral or alkaline medium, but are viciously active in an acid medium.) There is practically no direct or reflex stimulation to the muscular activity in the stomach or intestines, and the Osmotic action is fairly pronounced. This latter action, from the custom of drinking two or three glasses of warm water upon rising, loses its use and becomes a menace. With the absence of stimulation to muscular contraction the water remains unduly long in the stomach, and the Osmotic action may be too prounced. After some thirty years observation

of the effects of the custom of drinking hot water on rising, I am justified in saying that its use is so inferior to that of drinking cold water that the custom should be abandoned. If however, the custom of drinking hot water on rising is persisted in, it is extremely urgent that the patient stimulate the stomach by vigorous massage, in order to secure sufficient muscular activity to promote a fairly active expulsion of the water into the Intestinal Canal.

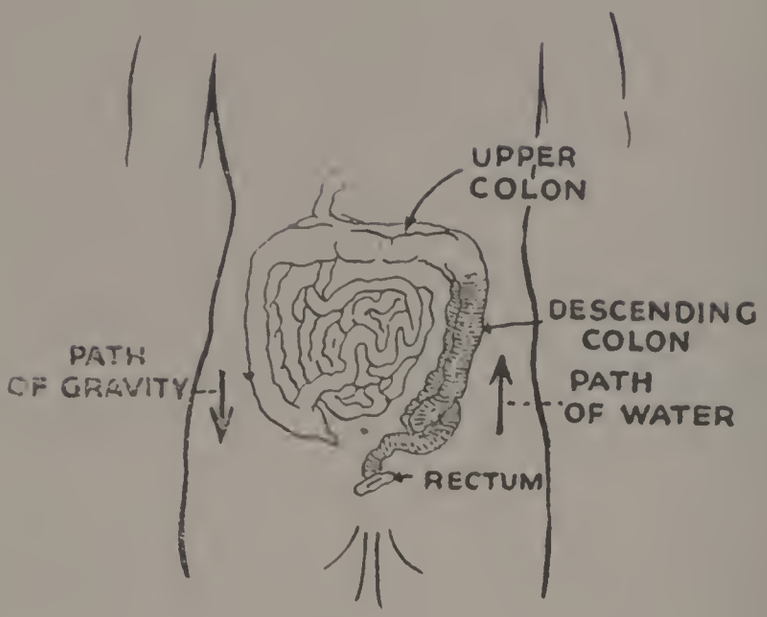
Cold water on the empty stomach has all the diluent action of warm water, and has a decidedly inhibitory action on the yeast and the sarcinae, and is directly stimulating to the motor-nerves of the muscular coats of the stomach. Nature reacts by sending increased blood to overcome the cold, and by relaxing the pylorus so that the water may be spread over a greater area in the intestines as well as in the stomach. In this way we have not only a direct stimulation to the muscular, but a stimulation to the mucous membrane because of the increased blood supply.

In this way, Nature gains rapid expulsion into the Small Intestine and has a cleansing effect upon the stomach; the Osmosis is not too prolonged and the Osmotic action is carried thruout the Small Intestine; the water rapidly reaches the high bowel where it has a decided laxative action. In contrast with the general conception, the action of cold water in the empty stomach is less injurious be-

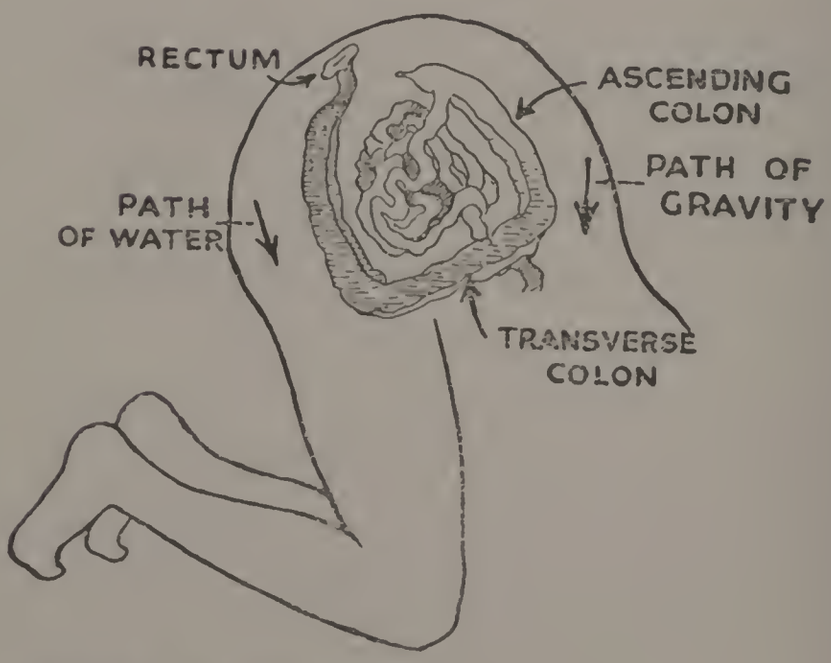
When water is introduced in a sitting position it rarely reaches past the Sigmoid Flexure and the rectum is distended and very often the after-effect is to weaken this organ. When lying on the left side the water will sometimes reach as high as the Sigmoid Flexure. However, in the knee-chest position the water thru the force of gravity flows into the Tranverse Colon, and when the patient assumes the erect position a very large portion of this water will flow into the Ascending Colon. So that for laxative action the effect would be a cleansing of the entire colon. While again, in the Ascending and Tranverse Colon, the water is readily absorbed and enters the blood, ultimately being elminated by the kidneys.

The benefits of assuming the Knee-Chest Position in order to introduce the water into the lower digestive canal cannot be exaggerated. In the female it affords opportunity for the pelvic organs to leave the pelvic canal and give better opportunity for the water to flow thru the descending colon. In the male it enables the water to flow by the prostate, and will relieve the sags in the bladder which infrequently is filled with acrid deposits.

The technique of introducing water in the lower canal is simple. The ordinary fountain syringe with the nozzle introduced a short distance within the canal is sufficient. Because of the irritation of the hard substance the soft tube is considered advisable. However, it is unnecessary. When the



UPRIGHT POSITION
(SHOWING IRRIGATION)



KNEE-CHEST POSITION
(SHOWING IRRIGATION)

patient takes the irrigation lying on the right or left side the water would have to force its way upward through the Sigmoid Flexure which is practically impossible. The folds of the rectum and the Sigmoid Flexure act like cup-like valves in these positions in order to hold the passage of the stool in check. However, in the Knee-Chest Position these depressions follow upward and afford free passage of the water.

If the patient is too weak to assume the Knee-Chest Position, let him lie on his face and elevate his hips by a couple of pillows. In extreme cases I have even elevated the foot of the bed. In cases of children I have lifted them by the hips and let their heads rest upon the floor.

In the Knee-Chest Position from four to six pints of water may be injected safely and without much inconvenience to the adult. However, in cases of sickness where we wish to irrigate with regularity, one quart will be sufficient.

If there is an impaction of fecal matter in the lower bowel when irrigation is attempted, it may be necessary that the patient have an evacuation before we can succeed in reaching the Tranverse Colon. Sometimes it is necessary to make several attempts before we can reach the High Colon.

In conditions of Splanchnoptosis, where there is a sagging or down displacement of the Transverse Colon, the weight of the water in the Knee-Chest Position in the Transverse Colon will do

much to restore this organ to its normal position, and it is advisable before massage is used on this organ that the High Colon Irrigation be thoroughly practiced.

The nerve supply of the colon is extremely sensitive to shock. The extreme prostration accompanied by Diarrhea and the extreme pain that accompanies Colic somewhat manifests the sensitiveness of these organs. Because of this fact, I strongly urge that all water introduced into the colon approach the normal temperature of this organ, that is about 101 degrees Fhr. Nothing is to be gained by the use of cold water, as the mere presence of water in itself is sufficient to promote peristaltic movement and it is never advisable to make this movement in excess. It has been my custom to neutralize the content of the water either by the addition of bicarbonate of soda or an alkaline tablet. The quantity used must depend largely upon the toleration. It must never be in excess of six pints and frequently a quart will meet all indications. In cases of the young infant as little as one-half pint may be used.

In the summer Diarrheas of children the alkalinity of the irrigation should be rather in excess. One-half teaspoonful of bicarbonate of soda or one or two alkaline antiseptic tablets will be found safe and healing locally to the membrane, correcting the irritation of the lactic and bacteriatic action of the stool.

In advanced Colitis much benefit will be gained by a free use of the alkaline antiseptic tablets. In addition to correcting the acidity and the acid content of the colon, they have a mild disinfectant action upon the fermenting bacteria, checking very considerably the fermentation of the putrefying gases.

It is wise to keep in mind the great sensitiveness of the nerves of the colon, and the necessary prostration which follows anything which has a stimulating effect upon these nerves. It is also highly advisable that after the use of the High Colon Irrigation, the patient have opportunity to rest a few minutes, or better if longer, after taking one of these treatments.

In conditions of interception (telescoping) of the bowel the mechanical weight of the water in the High Colon Irrigation, given in the Knee-Chest Position, has, in my hands, been able to correct this abnormality when confined to the colon.

It must be borne in mind that as a rule in the Transverse Colon and Ascending Colon, and, to a modified extent, in the Descending Colon, the Osmotic pressure is to the blood, not from it; in contrast with that of the stomach and Small Intestine, where, when empty, the pressure is from the blood to the water content. For this reason whenever we wish to obtain rapid absorption of the water, as in all acute diseases, the introduction of water

into the colon thru the rectum should be the initial step in the treatment.

The custom of using soapsuds as a supplement to the irrigation should be condemned. The caustic soda or potash in the stronger soaps is too irritating. However, in cases of impacted stool the addition of olive oil or a bland soap such as Ivory Soap acts as a lubricant. It not infrequently occurs that the rectum is impacted with hardened fecal matter. This is quite common in children and in adults who drink excessive quantities of milk. In these cases the parent should not hesitate to introduce the finger and, as far as possible, break up the hardened mass before trying to force it thru the anal passage; and it also must be remembered that if this condition exists in the rectum it is very apt to likewise occur in the Ascending Colon. In that event the irrigation should be supplemented by strong massage thru the abdominal wall in an effort to loosen and break up the mass.

Rarely will there be a sense of nausea as the water flows upward. This is more particularly true when the stomach is displaced downward and the water in the colon carries it up against the stomach. As a very general rule this should not be considered as any objection as under spasm of the irrigation the stomach will be contracted to its normal position.

Because of the rapidity with which water reaches the blood thru the colon, the High Colon Ir-

rigation is strongly diuretic; that is, it increases the flow of urine. The benefits of this are far reaching and many. In acute diseases it supplements the intestinal evacuation with the kidney elimination.

In conditions of High Blood Pressure it drains off the blood by the excessive passage of fluid thru the blood, lessening the bulk, and in this way lessening the necessary labor of the heart.

In Chronic Conditions it eliminates the poisons and chemical waste materials. In local affections of the large bowel, it affords us opportunity to give direct treatment.

Lavage of the colon is used merely in local conditions, such as Amoebic Dysentery, Suppurative Colitis, etc. It merely consists in introducing the water and siphoning it off. My own personal experience prompts me to believe this method inferior to irrigation because of the fact that it hastens elimination of the water from the bowel, and thus lessens the therapeutic value of the water.

In contrast with the colon lavage, the lavage of the stomach is a more Hydrotherapeutic measure, especially in diseases of the digestive system. For the simple reason that, as a rule, all peristaltic movement is downward and the stomach is in reality nothing but a mixing churn which from time to time, becomes mechanically and chemically diseased.

HOME TREATMENT FOR HIGH COLON IRRIGATION

STOMACH LAVAGE

It is surprising that the general public are so very antagonistic to this simple method of Stomach Lavage or washing out of the stomach. Less than one-tenth of one per pent. of my cases, and these number at a minimum of 20,000, have proved too difficult for stomach lavage.

Unfortunately, the Medical Textbooks have evidently been led astray by the old method of the sword swallower, who threw his head back and went thru various contortions as he swallowed the gilded rubber sword. As one visualizes the attitude that a person involuntarily assumes when he vomits, then one has the proper position for Stomach Lavage, where the muscles are most adaptable to the introduction of the tube. Again, the force of gravity plays a fairly important role and for this reason the head should be bent forward so that the saliva, instead of following the pharynx, will pass forward and out of the mouth.

A little practice will soon develop a high degree of skill with the individual in passing the tube not only to himself but to others. A recent case somewhat illustrates this. A Mr. C— engineer of one of the coast vessels had a Stomach Tube for his individual use. While his ship was lying in Rio de Janeiro, the captain was seized with Ptomaine Poisoning. The local physicians were unable to afford him any relief and it was with considerable

pride that Mr. C— passed the tube and washed out the offending material from the captain's stomach.

My technique in washing out the stomach is to have a quart sized funnel attached to about three feet of rubber tubing, and this in turn connected by a glass connection, either the Delafield or the Kemp Tube. (These can be obtained at Geo. Tieman Co's., N. Y.)

PROPER WAY OF SWALLOWING TUBE FOR STOMACH LAVAGE (left)
IMPROPER WAY OF SWALLOWING TUBE FOR STOMACH LAVAGE (R.)

For practical purposes a number 29 or 30 French size will meet all indications. In fact, even in young children no harm will arise from using a tube of this size.

The danger of passing the tube in too far is nil, as the tube will turn with the curve of the stomach. The escape of gas signifies that the tube has reach-

CORRECT METHOD OF WASHING OUT STOMACH

ed the stomach and then it is advisable to pass the tube an additional two inches after the escape of gas.

Within the stomach vast quantities of yeast and sarcinae bacteria are constant factors. These are very active fermenting bacteria in the presence of an acid medium, but are inert in an alkaline medium. Such authorities as Drs. Boas, Oppenheim, Rosenheim and Cohnheim, recommend the addition of bicarbonate of soda to neutralize the acids. The addition of salt has been prescribed by quite a number of American Specialists. I have found that the addition of alkaline antiseptic tablets proves very beneficial. In addition to neutralizing the acid content they have a mild antiseptic action on the various fermenting bacteria in the stomach. However, I use these very moderately, putting four or six tablets to one gallon of water.

The benefit of having a large glass funnel is to afford better means of approximating the amount of water thrown into the stomach. Rarely is it advisable to give in excess of one quart and in fact about one and one-half pint with each filling is the best gauge. The funnel is held at an elevation of about four or five feet above the stomach, and the water permitted to flow in until it reaches about one inch above the end of the funnel, when it is dropped to the basin and the water siphoned out.

If the water flows but promptly returns, it is due to the fact that food has clogged the tube or else

the tube is not far enough within the stomach. (It is then advisable to either introduce the tube further, or withdraw the tube and note if it is in any way clogged.) A little practice will soon make the individual very successful.

Lavage of the stomach should be practiced when the stomach is empty, the early morning Lavage or the late evening Lavage being advisable. In fact the latter has the advantage in that it renders the stomach content bland, affording a more restful sleep and permitting return to normal conditions because of the rest.

Usually four funnels full of water will secure thorough cleanliness. Lavage of the stomach, even in conditions of Ulceration, should be followed by moderate massage of this organ in order to overcome any possible dilation, that may be occasioned by the constant introduction of the water. In addition there will always be a slight residue which under the contraction of the following massage promotes laxation of the bowels.

Internal cleanliness should be practiced, not alone to meet the immediate conditions, but as a prophylactic for future possibilities. More than ninety per cent. of the deaths from so-called Heart Disease and Apoplexy are nothing other but manifestations of stomach troubles, which the prompt use of the Stomach Tube, and ample washing with bland water, would have immediately corrected.

The recent death of our President, Mr. Harding, is a broadcast illustration of this. As I formerly stated, there are about one-tenth of one per cent, of people who because of anatomical conditions find it impossible to use the Stomach Tube.

As we mature in age we lose our ability to properly evacuate the stomach. Children as a rule vomit easily. The stomach is in a more vertical position and its muscular coats are not weakened from stretching or dilating, and more readily respond to irritation in childhood. People past fifty should train themselves to easily and thoroughly evacuate the stomach, either thru emesis (vomiting) or by means of the Stomach Tube.

The stomach in reality is nothing other than a "still" where alcoholic, butyric, etheric, peptongenic and putrefying fermentations are constantly being encouraged, and when any or all of these fermentations become excessive beyond the point of toleration, there should be no question about removing them, either by means of vomiting or by use of the Stomach Tube.

To promote emesis, drink freely of warm water; this adds to the fluidity and bulk and enables better evacuation of the stomach. The drinking freely of several glasses of water, and irritating the fauces with the finger will usually promote a rapidly free expulsion. This should be repeated until the stomach content becomes bland and complete relief is afforded.

The processes of vomiting are much inferior to that of washing the stomach out. The straining of vomiting, not infrequently, forces the bile from the intestines back into the stomach and adds to the distress. The great prostration that follows vomiting is not experienced when the Stomach Tube is used, especially if the Lavage be followed by moderate massage of the stomach.

In the Digestive Tract, apart from the physiological action of water, it must be borne in mind that we have a physical action as well, and this physical action is in direct proportion to the specific gravity of the water in its relation to the blood. In other words, the nearer the water approaches chemical and physical purity, i.e. Distilled Water or H^2O, the greater will be its deviation from the specific graity of the blood, and consequently the greater will be its Osmotic action. Water in reality is a dissatisfied compound, having molecular affinity for chemical salts and vegetable acids. This fact of molecular affinity is of great therapeutic value, especially in Rheumatic, Gouty and Pregnant Conditions, for the drinking of distilled water in large quantities, promotes the absorption and elimination of the lime and other salts. The constant drinking of distilled water in conditions of Hardening of the Arteries is highly advisable, in that its affinity for the deposits of lime salts in the walls of the arteries promotes their elimination.

Because of these physical properties of water, it can be readily understood that alkaline and mineral waters deviate from the specific gravity of the blood much less than do distilled waters, and consequently distilled or rain water, frequently, has far greater therapeutic value than do the mineral waters. In other words, except to supply some specific remedy, plain water is superior in its therapeutic value to mineral waters.

CHAPTER IX

Hydrotherapy in Pregnancy and Birth

Generally speaking, pregnancy is a condition where Nature must be given exceptional opportunities to meet the extraordinary demands put upon her. In other words, Nature must go out of her usual routine to develop capabilities that insure maintenance of health, as well as to provide for the growth of the infant.

From a Hydrotherapeutic point of view, Water stands forth as the panacea in pregnancy and childbirth. In only one respect is it inferior, and that is in supplying oxygen. This is best furnished by the air.

In order to apply water reasonably, certain physical and physiological facts must be emphasized so that these uses may be guided in the proper channel.

Keeping in mind that the mother must not only nourish the infant, but must also eliminate waste material for both herself and her child, it can be readily understood that all organs of elimination must be toned up to a high degree of activity. Therefore, from the early stages of conception, water should be systematically drunk with some definite purpose.

To regulate the bowels, two glasses of cold water, taken upon rising in the morning, should be the routine practice. Much benefit will be secured by an additional five minutes gentle massage of the abdomen. This should be continued thru the entire course of pregnancy.

The drinking of mild citrus beverages between meals, as well as the free use of plain water, should be encouraged for its action on the kidneys. I also urge moderation in the use of proteid foods, more especially during the later stages of pregnancy, for proteids are too rapidly oxidized and cause excessive urea. Raw starches, such as are found in the apple, are difficult to oxidize. Citrus fruits, such as the orange, are especially valuable because of their solvent properties on the mineral salts, and for the manner in which they build up the alkaline reserves of the blood.

The rapid elimination of the mineral salts will go far toward *moderating* the labor of childbirth. With excess of these salts the bones of the infant prematurely become calcified, and resist the molding necessary to conform the parts to the avenue of delivery. Certain foods such as eggs, are especially abundant in lime salts, and during the last months of pregnancy they should be avoided.

Enlarged and varicose veins are a very common and distressing complication of pregnancy. This results from mechanical pressure upon the veins in and below the abdomen. At noon every day, a

half-hour Sitz Bath in a tub of warm water, for its drainage effect on the veins by Osmosis, will be of immense value in correcting varicose veins. The muscular coats of the larger veins will be stimulated by mild massage supplementing the sitz bath.

The question of bathing is one that requires considerable individual attention. The Cold Tub, while stimulating, is too severe, and the prolonged general bath too depleting. The cold sponge bath is not so severe as the cold tub-bath, especially if the woman can stand in a tub or basin of warm water. The Cool Shower, standing in several inches of warm water, more nearly approaches the ideal bathing for the pregnant woman than any other.

Colon Irrigations are especially beneficial to pregnant women. Keep in mind the physiological fact that the High Colon Irrigation is especially active in flushing the kidneys as well as the bowels. The only symptom which should be allowed to discourage the fairly regular bi-weekly High Colon Irrigation thruout pregnancy is emaciation, which may occur occasionally, because of the stool being hurried thru the large bowel,—the powers of absorption in the small intestines being insufficient to properly nourish the mother.

Pregnancy always means *oxygen-hunger* for the mother. Apart from the interference with diaphragm freedom, the mother must supply oxygen for the tissues of the child, and ultimately, in the later months of gestation, actual oxygen for the

child's circulation. Again, the development of maternity on the part of the mother requires increased oxygen to meet this demand. This indicates the need for access at all hours to free atmosphere.

At the sea-level the air is more condensed and contains relatively more oxygen. Therefore, the pregnant woman, as a rule, thrives better in lower altitudes. Where it is possible, the pregnant woman should move from high altitudes to lower levels, especially after the fifth month. Moderate exercise in the open air is imperative, and the *sleeping room should always be freely ventilated.*

With the first evidence of Albumen in the urine, or even vertigo and dizziness, the Hot Dry Pack should be used every second or third night. The custom of a regular weekly sweat after the sixth month is of exceptional value to both mother and infant, in that it materially eliminates the waste materials of tissue combustion, and relieves as well the overstrained circulation of the abdominal and pelvic organs.

This sweat can be made a matter of simple routine. The mother drinks a large glass of hot lemonade, well sugared, and lies in blankets, surrounded by hot water bottles, thus exciting a moderate sweat. After an hour's sweat the bottles can be withdrawn, and the mother left to sleep the night out. During my early years of practice I made this the regular routine.

My results from dieting were very gratifying. Keeping in mind the fact that the most difficult and painful stage was that of the molding of the head, I sought to keep the supply of mineral salts down to the minimum after the fifth month. The mother was encouraged to live mainly on raw fruits and vegetables, in which the protein content is very small. Oranges stood foremost on the diet, and eggs and the white bean were strictly forbidden. Celery, lettuce and spinach were used freely. To make up for the deficit of carbohydrates, I recommended sugar to be freely used. Potatoes and turnips, well boiled without salt in the water—to promote the removal of the mineral salts of the vegetable—were allowed. Instead of breadstuffs, boiled cereals without salt, but well sugared, were allowed.

Under these restrictions the pains and duration of labor were reduced to the minimum. Two of my cases stand out prominently in my mind, where the mothers delivered healthy boys in less than a half-hour's labor.

The conditions after delivery are just opposite to those of antedating childbirth, and the diet should be abruptly changed to meet the change of circumstances. The mother has had her supply of mineral salts reduced to the minimum. She must now have opportunity to supply the lack. Her diet consequently should be largely protein. This

is more important when the mother nurses her child, as the child's bones require the mineral salts.

During the early stages of labor the deep, warm sitz bath is most beneficial. It modifies, the local pain, and by its Osmotic action lessens the blood in the perineum, and promotes relaxation and consequent dilation. Before the head passes over the brim, the mother should leave the tub, and hot fomentations be substituted over the parts.

With the beginning of labor, High Colon Irrigation is very essential and beneficial. If labor be prolonged, *a second irrigation should follow,* eight to ten hours after the first.

A moderate sweat by means of the Hot Dry Bed Pack, promotes the appearance of milk. This may be given the second day after the confinement.

With involution — that is, return to the same physical condition as before pregnancy—much of the surplus tissues must be consumed. The mother therefore, should always have free ventilation in the sick room, to afford plenty of oxygen for tissue combustion. Carbohydrates should be somewhat restricted because of the fact that they do not oxidize as readily as the proteids. Neglect of this precaution frequently results in Obesity, which explains why more than seventy per cent. of young matrons become fat after childbirth.

In my cases I recommend, after the first day, copious vaginal douches of vinegar and water as hot as can be tolerated. The refrigerating action

of the acetic acid of the vinegar, supplements the soothing action of the hot douche.

After the fifth day the local Cold Wet Pack, changed every three or four hours and accompanied by gentle massage, proves of value in restoring the normal figure of the abdomen. The Cold Wet Pack, carried over the breasts, keeps down congestion of these glands, and lessens dangers of caking and cracking.

I do not advise bathing the infant for the first forty-eight hours. The custom of rubbing the newborn infant with olive oil is commendable, for not only does it soften the smegma, but it also assists in keeping the infant warm.

I never advise an abdominal bandage about the infant. In a number of cases I have seen intestinal spasm, resulting from a tight bandage. All male children should have the fore-skin circumcised or withdrawn, as soon as the physician or midwife can spare time to attend to the infant.

In Excessive Hemorrhage, when all other means fail, ice or ice water may excite contractions, but is inferior to compression. This compression is performed with one hand in the vagina, and the other grasping the fundus of the uterus thru the abdominal wall, strong pressure being made toward bringing the hands together. The failure to contract on the part of the womb in these cases is largely the lack of coordination, but with compression to substitute the contraction of the longitud-

inal muscles, the circular muscles will automatically contract.

The feeding of the infant, from a Hydrotherapeutic standpoint, is important. In breast-fed children a teaspoonful of water preceding the breast not only serves to dilute the milk, and in this wise promote the emulsion of fats, but it also supplies additional mineral salts. In infants and also in adults, practically no saponified (solid) fats are absorbed,—they become only waste material in the stool. Much of the benefit claimed by the addition of Lime-Water or Milk of Magnesia lies not in counteracting the acidity of the stomach, but rather in the fact, that alkalinity promotes the suspension of oils in the emulsified form. Emulsified fat can reach the blood in but moderate quantities, but saponified fat cannot be absorbed.

The artificially fed child should not be crowded with fats. The addition of cream to the prepared bottle is not only a waste, but it is liable to upset the equilibrium of metabolism, and produce Rheumatism or Intestinal Disorders. The benefit obtained from the addition of cream is from the increased quantities of sugar of milk. Carbohydrates are more readily digested and absorbed than are fats. In all my infant cases where artificially fed, I diluted the milk content from fifty to twenty per cent with sterile water, and, in addition, skim-

med the cream from the milk. However, supply sugar and starches liberally by the use of Mellin's, Eskay's or Imperial Granum prepared foods. My cases were practically free from bowel disorders and compared very favorably in growth and development with children otherwise fed.

CHAPTER X

Diseases of Children

The custom of encircling the new-born infant by the restricting bandage cannot be too earnestly condemned. The restriction is an unnatural one, *interfering with free peristaltic movement of the undeveloped stomach and intestines*; interfering with the passage and discharge of food and other gases. The grave apprehension of having the navel infected has probably been the origin of this custom and it is universally followed. In the effort to overcome the constriction the long axis in the stomach not infrequently becomes displaced and we have an actual sagging with spasm of the pylorus. This is always followed by a long train of digestive disturbances.

It must be borne in mind that infants with their great readiness to expel food from the stomach are naturally less prone to suffer stomach conditions than are adults. Consequently, it is highly necessary to seek some outside cause for digestive disturbances in children. Unfortunately most of our specialists in children's diseases endeavor to correct these conditions by modifying the food rather than by eliminating the cause. In other words they seldom seek to correct any mal-position

within the Alimentary Canal. Foreign substances or decomposing matter are readily thrown off by infants in their vomit, and it is practically easy to feed the infant water in order to dilute this matter and more thoroughly cleanse the stomach. The stomach of the infant lies high within the abdominal cavity, normally and strange as it may seem, practically no stomach digestion is required in the infant, the main digestion being the splitting up of the fats which is obtained by the bile and pancreatic juices in the small intestine. Therefore it should be the first rule in all conditions of digestive disorders in infants to cleanse the stomach by giving the infant water to drink and be vomited, and follow by the High Colon Irrigation and fairly brisk massage, more especially in the triangle immediately below the breastbone, and abstinence from food until all conditions have become relaxed within the Alimentary Canal. Keeping in mind the fact that the High Colon Irrigation reflexly evacuates the liver, it can be recognized that this stimulation of the liver vastly improves the digestive functions of the bile and pancreatic juices, which in the infant, as I said before, are the main digestion.

Contrary to the general conception, many fats are not well tolerated in the infant. A relative analysis of the intake and the output will indicate that in a normal healthy child less than five per cent. of the fats ingested are absorbed. The emul-

sion of milk is readily attacked and liberated in the presence of acids. (Alkalines encourage emulsion; acids destroy them.) It has been my uniform rule to deprive the artificial feeding of as much fat as is possible in all deranged conditions of the stomach and intestines. By substituting the fats with a well cooked starch and a sugar we escape the destructive action of the acids on the fats in the stomach, and the pancreatic juices and bile readily convert these cooked starches or sugars into Glycogen or fat. Thirty odd years of substituting the fats by the cooked starches and sugars has clinically satisfied me that they are superior to the animal fats found in the milks. While not advertising any particular brand of infants' food I would say that practically any of them well boiled and strained meet all indications. In fact, in any condition of acrid stool, either with Constipation or Diarrhea, and in most healthy children, I have followed the procedure of first skimming the milk, bringing it to a boil and adding equal parts of water with a fairly liberal amount of some well-cooked cereal, such as Mellin's Food. Eskay's Food, or Imperial Granum, with marked improvement in practically every case.

In Chronic digestive diseases of children remember that Malaria, being a blood disease, is capable of being transmitted to the infant before birth, and that children, as a rule, are more susceptible to the acute manifestations of Malaria

than are adults. Consequently, whenever the attacks of digestive disturbances come with periodicity, that is with intervals, it is strongly advisable to suspect Malaria as present and to supplement the treatment with remedies for Malaria. In fact during my early years of practice, it was my uniform rule to search for Malarious complications in all conditions of digestive diseases of children.

The process of boiling the milk has this additional advantage,—Certain of our milks are preserved by Formalin which the process of boiling drives off in the shape of gas. Benzoate of Soda and Peroxide of Hydrogen also used, are rendered more benign in the process of boiling. Where the mucus discharge is persistent and extensive a few grains of Mucilage of Acacia added to the bottle of food, (because of the Tannic Acid it contains, which is set free by action of the bile), has a decidedly bland, astringent, and curative action on the lining membrane.

The amount of food required by children has been a question, but we always have in mind that the infant readily vomits the food when given in excess, and, with this safety gauge, the quantity should play a much less important role than is advised by most of our text-books. Again, it must be remembered that the only water the infant is given in the vast majority of cases is obtained from the milk and when we deprive the infant of a fairly liberal supply of this food we not only

interfere with organic functions but retard development.

If we observe the conduct of the infant animals with their mothers, we can see that seldom does the mother cow check her calf, or the sow, which like the human being is omnivorous, restrain her offspring either as to time or amount. While the calf will thrive on the mother's milk directly obtained from the breast, yet this same calf will become emaciated from the same milk if it be obtained fro mthe pail or the suckling bottle. So common is this knowledge that farmers, as a very general rule, feed all their sucklings skimmed milk with a small quantity of cereal added to it. To milk, the very presence of air, or the lack of motion, excites the lack of emulsion of the milk. The settling of the cream to the top of the bottle is evidence of this, and where the fatty acids are not properly emulsified they are irritating to the stomach and intestines and are capable of exciting deranged functions and inflammatory changes within the stomach and intestines.

It was my custom to direct the parents to permit their children to drink all of the prepared foods they wished, but to let them be hungry before feeding again, and the splendid success that followed this procedure warrants my advising my readers to follow it. The use of lime water in the artificial food is none other than to neutralize the acid in the stomach, and in this way, moderate

the fat-splitting effect of the acids. Unfortunately alkalines have the property of increasing the acid flow in the stomach so that the very cure that is advised is in itself the cause of the condition. On the other hand, bland vegetables and fruits do not result in increased acidity and they are capable of moderating the flow of acid. Sugar, which in reality is nothing other than a fruit or vegetable juice, is to be encouraged in conditions of Hyperacidity, and, in these conditions, instead of adding lime water to the artificial feeding, the amount of sugar added should be increased. Toleration of foods with an abundance of sugar will be extremely gratifying to the average mother who has been feeding her child artificially.

With infants, pain and spasm in and about the abdominal canal will be afforded much relief by the application of the Local Cold Wet Pack. It is quite inconvenient to give the infant the general Hot Cabinet Pack, and it is frequently impractical. The Hot Bed Pack to increase sweat and eliminate Malaria, as I will describe in my chapter on this disease, can be used to much advantage. However, Quinine in the form of Elixir of Calisaya, in doses of from twenty to thirty drops, combined with the simple Syrup of Rhubarb in one-half teaspoonful doses three times a day, was found to be practical.

ERUPTIVE DISEASES

Whenever the child experiences a sense of laziness, headache with a chill and sneezing, and the skin feels hot and dry, it is advisable that the throat and mouth be inspected by the parent, and the child closely watched until recovery has taken place. The first evidences of eruptive diseases can be usually found in the tongue and gums and the fauces. The red tongue of Scarlet Fever is characteristic; and the strawberry appearance, the botchy puffed appearance of the tongue and gums in Measles, the redness of the tonsils and the pharynx of Diphtheria, are almost diagnostic of these diseases and, when present, the child should be immediately subjected to a High Colon Irrigation and put to bed. All eruptive diseases are infections which Nature, in her effort to eliminate, calls upon the skin as the first organ of elimination; so that it is very imperative that the child should not be exposed to wet or dampness or chilly atmosphere whereby the skin will be prevented, because of the chill, from eliminating the disease. Should this occur the function of elimination would be thrown back upon the other organs of elimination, that is, the kidneys the bowels and the lungs. Consequently, it can be readily recognized that Pneumonia and Bronchitis, Measles or Nephritis (inflammation of the kidneys) are largely due to the failure upon the part of the skin to perform the

function of eliminating the disease. In all eruptive diseases the skin should be encouraged to perform its function to the utmost. The Hot Bed Pack with plenty of hot drinks will usually meet the indication. However wherever it is possible, it is highly advisable to use the Hot Cabinet Pack and to maintain this Hot Cabinet Pack for a minimum of five hours whether the case be that of Measles, Scarlet Fever, Smallpox, or Cowpox. Not infrequently the infant will pass thru the complete stages of Scarlet Fever or Measles in an eight hours exposure to the Hot Cabinet Pack, and the following day be entirely free from all manifestations of the disease. However, in Smallpox it is advisable to maintain the sweat for at least eight hours, or until the skin is all bleached out. My experience with this latter disease has not been extensive for with general use of vaccination the prevalence of this disease has become quite extinct. In the three cases that I was able to use it on there were practically no scars nor pustules formed, altho in these three cases the diagnosis was verified by the Board of Health Experts. In one case, however, the disease was not recognized and was taken for Pemphegis until I arrived and the pustules had already formed. However, these cases, after the sweat, were of brief duration. With the prolonged sweat all complicating manifestations, as a very general rule, will disappear. Bronchitis, Pneumonia or Measles usually clear up within an hour

after the sweat has begun. The same is true of Nephritis and manifestations of Scarlet Fever.

DIPHTHERIA

Not infrequently Diphtheria and Scarlet Fever present themselves at the same time. In this event, the Scarlet Fever should receive the first attention and the sweat should be maintained. However, Diphtheric conditions, as a very general rule, present themselves on the mucous membrane which lies near the skin, that is, — the tonsils and pharynx.

In treating Diphtheria it must be borne in mind that all bacterial activity is checked by cold and stimulated by heat, up to a certain degree, (usually 110° Fhr.) and destroyed by intense heat (usually boiling point.) Consequently, our object in the treatment of Diphtheria is to delay and control the development of the infection until there are sufficient Autogens developed in the system to destroy it. As I said before, the proximity of Diphtheric infections to the skin affords us opportunity to bring ice in contact with the affected parts. In other words, with appearance or even suspicion of Diphtheria the throat should be packed in a towel filled with cracked ice and the parts frozen thru. It was a rule in Dr. Guenther's Sanitarium to maintain this Ice Pack for seventy-two hours. However, when complicated by Scarlet Fever the manifestations seemed to

subside much more readily than otherwise, apparently because of the antagonism that these infections entertain for each other. The Ice Pack should be preceded by the High Colon Irrigation.

Where the membrane has already formed, a swab of fifty per cent. alcohol should be applied to the throat. The alcohol very readily penetrates the membrane and destroys the local infection. However, where the membrane is not thick this is not necessary. Occasionally, in these conditions there will be manifestations of collapse. Should this occur, application of ice over the heart is indicated, in order to secure proper muscular activity of the heart muscles.

The diet in Diphtheria should be essentially stimulating. The rapidity with which Diphtheria generates toxins demands this. From the very beginning of the disease Alcohol stands preeminent as the article of diet. In children, Sherry Wine diluted in fairly liberal quantities should be encouraged. In the more mature and in adults the Ginger Ale Highball is indicated. Alcohol in itself is a disinfectant and destroys the process of infection which might possibly be carried out by its ingestion into the stomach. Again, Alcohol very readily oxidizes in the blood and reflexly excites the demand for oxygen, and, in this way, is stimulating by increasing the intake of oxygen, consequently promoting more active vitality. The dangers of alcoholism in this disease are

very slight, as Diphtheria usually reaches its maximum stage before seventy-two hours have elapsed. Where the child or adult is fairly robust, Sugar added freely to the Alcohol will be found to be nourishing. Indiscriminate eating is not to be encouraged as it places too much work upon the digestive system as well as carries the infection into the Alimentary Canal.

The absence of fever in these cases is not altogether a good sign, as it frequently indicates prostration from the excess of toxins in the blood. In infants, keeping in mind that cold has the advantage of checking the activity of the infection, after the acute manifestations have subsided, ice cream will serve as a substantial food with least menace. I prefer the creams with vegetable acid, and, for this reason, advise the use of lemon ice cream in preference to other flavors. Citric acid in itself has a mild Antiseptic action. The use of Diphtheric Antitoxin has become imperative under the laws of The Health Department. It is inferior to the ice treatment in that we have the menace of infection or poisoning from Antitoxin as well as the pain and the shock of the drug. The merits of Antitoxin have been discussed in a previous chapter and require no repetition here.

WHOOPING COUGH

Altho this disease is looked upon as generally being benign, statistics prove that it is not infre-

quently fatal in its termination. Extreme spasms throw great strain upon the heart, lungs and abdominal organs. Authorities differ as to whether this should be considered as a pulmonary disease or as a disease of stomach origin. Arguments greatly favor the latter probabilities. It is characteristic that after the vomit all evidences of the condition disappear. The Hydrotherapeutic Treatment of this disease is to encourage as much rest to the stomach as possible. Frequent drinking of cool water in order to promote emesis or vomit aids in promptly relieving the symptoms. Massage over the pylorus reflexly results in relaxation and moderately lessens the frequency of the paroxysm. Where, as the result of the whoop, the bronchial tubes become congested (and this condition is a frequent accompanying factor of the disease) the use of the local Cold Wet Pack at night on retiring is not only useful to moderate the symptoms, but to prevent Pneumonic development.

In cases of marked severity I have seen almost complete cure result from the use of the prolonged Hot Cabinet Pack where the child sweated freely for four or five hours. Where it can be done without exciting paroxysm, lavage of the stomach with a mild antiseptic has met with splendid results. However, do not forget that the tube is very apt to excite a reflex spasm and bring on a paroxysm. At the first manifestation of paroxysm the tube

should be withdrawn . As a general rule, this measure, while extremely salutary in its results, is too delicate to be used except in the hands of an expert. In young children the Hot Cabinet Pack is advisable.

Most Medical Authorities encourage the child to have plenty of fresh air and to go about playing in order to increase his general vigor to carry him on thru the exhaustion of the disease. This should be done with moderation, and it must be borne in mind that the disease in itself throws a great strain upon the heart, and the child should be encouraged to take as much rest as possible, preferably in a prone position in order to rest this vital organ. Children should not be encouraged to run and vigorously play while they have this disease. Before the child retires at night it is strongly advisable that he be given plenty of water to drink and massage be vigorously performed over the abdomen. This will probably excite a paroxsym and the stomach contents will be thrown off, affording free clensing of the stomach and a general relaxed condition. This will further enable the child to rest better during the night. The grave question in cases of Whooping Cough is the effect it has upon the right heart, and while children or adults should be permitted to have modest exercise in the open air at all times, care should be taken that the patient does not become over exerted and has ample opportunity for rest, and any

medicine that is in any way irritating to the stomach should be avoided.

The diet in Whooping Cough requires special attention. Citrus foods in themselves are mild antiseptics and the same can be said of fruits and vegetables that contain lactic or malic acid. Consequently, the child should be encouraged to eat freely of cooked vegetables and cooked fruits. Sugar also has a mild preservative action as well as being non-irritating to the stomach, and all foods should be thoroughly sweetened. On the other hand, all spices and especially foods like onions, tomatoes and coffee shoul be avoided. Milk, unquestionably, should be denied children because of the excessive acidity in the stomach which is generally found in these cases. Again, milk is a fruitful field for the cultivation of the bacteria of Pertussis (Whooping Cough) on the fauces and in the stomach of the patient. The same is also true of eggs. Again the free use of cooked fruits and vegetables have a mild action, draining off the liver and reflexly soothing the stomach spasm.

The graver types of children's diseases require identical attention with those of adults and the same principles will apply in the treatment of them

URTICARIA OR HIVES—NETTLE RASH

This disease owes its origin to a chemical source, in contrast with the bacterial origin of Measles

and Scarlatina. Here the sweat affords only temporary relief, unless supplemented by other measures. The origin of this chemical abnormality will be found in the digestive canal and in the food. Vegetable foods are almost as prone to generate this excess of irritating acids as are meats and fish. High Colon Irrigation should supplement the sweat.

A prolonged exclusive diet of diluted milk over a period of several weeks will be found valuable in this trouble. The addition of powdered chalk or Milk of Magnesia to the milk will neutralize somewhat the irritating acids in the stomach and intestines.

CHOLERA INFANTUM

This disease is extremely prevalent in all sections of the United States. It is a disease of warm weather, as a rule, existing in milk-fed children. The stool shows liberated saponified fatty acids in abundance, together with large numbers of lactic bacilli and streptococcus and swarms of colon bacilli.

In distilled water all these bacteria are practically inert. Therefore, in from 72 to 96 hours, in a distilled water medium, they lose their characteristics and die. *This indicates the use of distilled water, both by drinking and by colon irrigation.* Care should be taken to equalize the circulation by keeping the blood moving freely in the

vessels of the skin. When the collapse is not pronounced the use of the Cold Wet Pack, extending from the neck to the knees of the infant, is indicated. However, where the collapse is pronounced, the HotDry Pack should be used.

In an infant of one year and under, the hips should be elevated and a half pint of warm water should be injected. This should be repeated three or four times within twenty-four hours. The infant should be encouraged or even forced to drink water from the spoon or nursing bottle every half hour. In most cases, the addition of sugar will induce the child to drink freely of the water.

All milk should be withheld until the stools are free from the characteristic sour fatty odor, or until the microscope shows a return of the normal amount of the lactic bacilli.

The feeding of children under two years of age during the hot months should be with the idea of maintaining the fats or fatty acids in the blandest state. Nursing mothers should drink freely of water before nursing. Artificially fed children should have the sugars substituted for the fats as far as possible, keeping it in mind that sugars are more readily digested and assimilated than fats. Sugars are not only poor fields for the culture of bacteria, but are actually destructive to bacterial life. The preservative quality of sugar is known to every housewife, yet this preservative power in no way retards the digestive enzymes. Again, the very

presence of sugar will promote diastatic conversion of starches into sugar. The sugar of barley is particularly well tolerated by the digestive systems of infants under two years of age, as is also pure maple sugar.

In these conditions, it must be remembered that the internal congestion of the lungs and air passages materially interferes with the supply and the discharge of gases from the blood. Therefore it is highly imperative that fresh air be admitted to the patient at all stages of the disease.

INFANTILE CONVULSIONS

The vast majority of cases of Infantile Convulsions are due to gastro-intestinal disturbance. In these cases, the High Colon Irrigation should be vigorously practiced, with the hips of the infant well elevated. In those cases in which it is impossible to evacuate the stomach by tickling the throat, the stomach tube should be passed thru the nostril and the stomach thoroughly cleansed.

MUMPS

Mumps is a disease in which Nature attempts to throw off the infection thru the Salivary Glands, whence the excretion is ultimately eliminated thru the colon. The Hydrotherapeutic treatment in these conditions consists of the High Colon Irrigation, followed by the Hot Dry Pack of five hours duration. This procedure will render the attack mild and of very moderate duration.

CHAPTER XI

Coughs and Colds

It is wise to begin the discussion of these frequent infections by impressing the fact that the Cough and the muscular lameness (Colds) are not in themselves disease but are merely prominent manifestations of disease.

Because of the fact that fully 90 per cent. of these so-called Coughs and Colds in their acute manifestations are of short duration they are generally looked upon as being insignificant. The custom of the hot drink, the Quinine capsule and a sweat in bed has been so uniformly beneficial in these cases that rarely is a physician called upon to give them his professional attention, and it is only when the underlying cause or disease manifests itself and is progressing in severity that the physician is called in.

Fundamentally, it must be borne in mind that while Coughs and Colds are usually simple and of short duration they are fairly frequently but manifestations of some grave disease, and it is very important that just so long as the patient feels a sense of weariness and exhaustion that he remain in bed either until he has become refreshed and invigorated or until more severe manifestations present themselves.

The Cold that presents itself following exposure is always accompanied by an internal congestion. This congestion may be of such grave nature as to interfere with the functioning of the lungs and produce Pulmonitis, Pleurisy or Pneumonia. Bronchitis is a very frequent result, and so common that it is generally understood that a Cold is always accompanied by a Bronchial cough.

This fact being realized, it can be readily understood that the first step in correcting this condition should be to relieve the internal congestion by producing Cutaneous Hyperaemia (skin congestion). The various means of producing Cutaneous Hyperaemia can be followed with satisfactory outcome according to the preference of the patient. The Local Cold Wet Pack, in which a hand towel is dipped into cold water and spread over the chest and abdomen and covered by a bath towel with the bed clothes well drawn up, is the most efficient. Occasionally it will be found advisable to change this Pack every two hours. This should be preceded by a High Colon Irrigation, the technique of which is described in a previous chapter. Water should be given freely to drink, and free ventilation of air assured.

The Hot Dry Pack commonly used to produce a sweat is usually sufficient. This should be preceded by a High Colon Irrigation and accompanied by free drinking of water. The addition of alcohol to the hot drink has the effect of dilating

the skin blood-vessels and in this way increases the rapidity with which the sweat is arrived at. However, alcohol internally is not necessary and not infrequently will produce nausea in those unaccustomed to its use. It is not advisable to have the sweat pronounced in these cases as we do not wish to bring about too severe a reaction. The method of applying the Hot Dry Pack has been described in a previous chapter and does not require repetition here.

In conditions where the cough is profound and the menace of actual inflammatory changes, either in the shape of Pneumonia or Pleurisy, are suspected, the Cold Wet Pack should be used and, when accompanied by fever, should be changed at fairly frequent intervals. It has been my custom where the temperature was found to be above 103 degrees, to change the Pack every hour for the first three or four hours until all acute manifestations had subsided.

The use of drugs in these conditions can not be too strongly condemned. The habit of taking Aspirin or Quinine to break up a Cold is very liable to result in masking the actual condition, while again it adds to the shock and depletion of the vital powers already taxed by the disease. Frequently, a physician is unable to make a diagnosis of the actual condition because of the complex symptoms resulting from the drugs. I have seen cases of Bromine eruption mistaken for the rash of Ty-

phoid; the skin eruption of measles delayed and the case diagnosed as Pneumonia because of the free use of Paregoric to relieve the infant's cough; Gastritis which was nothing other than the irritation of the drug, etc., etc.

The cough, the cold and the exhaustion are symptoms, and we must be alert to discover whether or not they are symptoms of some graver disease, and by simple methods afford them opportunity to correct themselves. These methods must be such that will be beneficial in rendering any underlying disease less severe. Water, being a natural element, and used in such a way as to promote the best natural efforts to correct disease, is in no way harmful in any condition and fortifies Nature to accommodate herself to any emergency that may arise.

The sense of exhaustion is the danger sign that we all must heed. It is the constant symptom of Typhoid Fever, most conditions of Malaria and of Auto-Intoxication. It is very imperative that just so long as the sense of weariness is experienced the patient have rest in bed. Many a leaking heart valve owes its origin to the fact that the patient ignored this sense of weariness and developed, as a consequence of his Auto-Intoxication, Rheumatic conditions in the blood and in the heart walls.

Where the sense of fatigue persists the High Colon Irrigation should be repeated at every twelve hours interval. The night and morning bowel

wash is advisable. The diet in Coughs and Colds does not require much consideration unless they be accompanied by stomach symptoms. A patient resting in bed and not using up his reserved vital forces to the same extent that he would were he actively engaged in his occupation, requires much less nourishment than otherwise. In fact the absence of appetite is a very frequent accompanying symptom and just so long as the patient does not desire food, a very good rule to follow is to not encourage him to eat. Again, because of the menace that the Cold may be nothing other than an early manifestation of Typhoid, it is advisable to abstain from the coarser foods, such as raw fruits and vegetables. On the other hand well-cooked fruits and vegetables, by their action of promoting the activity of the liver and the flow of the bile, are to be encouraged even in cases suspected of being of Typhoid origin.

Eggs are to be avoided because of their proness to be mediums of bacterial cultivation within the intestines. It must be kept in mind that a patient lying in bed in a condition of semi-invalidism does not have the same freedom of excretion of the alimentary contents as when active, and consequently decomposition within the intestines is more apt to become pronounced. I have seen cases of Acute Inflammatory Rheumatism follow a rest in bed from a Cold, resulting from the excessive use of whiskey and eggs. The so-called egg-nog must

be advised against. On the other hand, I have been a convert to the free use of cooked fruits in the shape of apple-sauce, compotes made of rhubarb and apples, of pears and oranges, etc.

Mashed potatoes and milk with the free use of salt are very meritorious. Raw and rare meats should not be used.

The habit of visiting the sick during the acute stages should be condemned, more particularly when the patient suffers from an irritating Cough. The natural instinct to maintain a conversation adds materially to the irritation of the Bronchial Tubes as well as to the exhaustion of the patient, and Nature should be left alone in her efforts to correct any abnormality. Pollen of plants, as well as the aroma, is very apt to irritate the congested Bronchial Tubes and it is strongly advisable that flowers should not be permitted in the sick-room.

Should the patient suddenly develop a prolonged chill, it must be recognized that this chill means nothing other than the involvement of the lungs, with strong probabilities of Pneumonia as the outcome. While this condition is usually prevented by means of the Cold Wet Pack, yet if it should occur in spite of the use of the said Pack, the indications then are for some more vigorous treatment. The Wet Pack should be removed and the Hot Dry Pack, or, better, the Hot Cabinet Pack, substituted and a vigorous sweat induced. The

Treatment of Pneumonia will be more elaborately detailed in a future chapter.

If, in spite of rest, the use of the Cold Wet Pack, and moderate diet, the sense of exhaustion persists accompanied by a full headache, after three or four days Typhoid Fever will probably manifest itself. On the other hand if after the second day we have a return of the symptoms, then we know we are dealing with Malarious infection.

The danger of a cool atmosphere is generally exaggerated. The cooler the atmosphere the more condensed it is the greater is its oxygen content, and when we close the window and heat the room we throw additional labor upon the vital forces in their efforts to obtain sufficient oxygen. While the results may be somewhat alarming because of the open window and the cool room, the outcome will not only be much quicker but with far less depletion than otherwise. Even in Pneumonia, the cold room is the best.

In considering the question of atmosphere and temperature in the sick room the basic principle should ever be considered, that is, that disease in any form is a deviation from the normal workings and co-workings of the various organs and systems composing the body, and that Nature's effort must be to meet the demands of this abnormal condition and thru vital means, correct it. Therefore anything which will throw further labor upon the heart and lungs is to be avoided.

It is a well-known fact that Typhoid Fever cases being carried to the hospital are far more fatal than those that are left in the same environment in which the disease found them.

In 1914, during an epidemic of Typhoid Fever, at Long Beach I had twenty-eight cases of Typhoid Fever that I insisted upon remaining upon the porches of their bungalows night and day, with no medication other than Spring Water (Poland) and the disease ran a very moderate form almost simulating Paratyphoid.

In contrast, with those cases that were removed to the hospital in the city, the disease assumed a very grave type and some cases a fatal termination.

There will be among the readers of this book some who are not familiar with the circulation of the lungs. For these I would like to explain in simple terms that the circulation of the lungs really is the blood as it is returned from the various tissues, being pumped by the right side of the heart thru the lungs, where it has opportunity for the carbonic gases to escape and unite with the oxygen of the air, as well as for the fluid portion of the blood to absorb oxygen.

In the air we have two main gases which are free. These gases are nitrogen and oxygen and there is about three times the amount of nitrogen that there is of oxygen. In other words the chemical formula

of air is N^3+O. The more condensed or cooler the air, the more free oxygen is contained.

Oxygen, after respiration, is combined with the carbonic gases of the blood in the form of Carbon Dioxide, CO^2. So that the atmosphere that has not been freshly supplied with oxygen contains much less oxygen than otherwise, and not only is an excessive amount of effort required to secure the necessary amount of oxygen in the blood, but also we are very apt to not obtain enough oxygen to permit a sufficient passage of the waste gases of the blood.

Thus, it can be readily seen that, in disease, not only does a lack of fresh air throw an extra amount of labor on the lungs and heart; but, it is also very prone to prevent a sufficient passage of the poisonous air and waste gases of the blood.

While it is true that frequently cold air will increase the irritation of a cough, yet of the two evils, the lack of oxygen is the greater.

Again, oxidation is one of the means of destroying infection, and the very excessive oxygen that is being inhaled in local conditions in the air passages is the means of destroying an infection.

By maintaining the increased blood in the skin by means of the Hot Dry Pack, or Cold Wet Pack, there is practically no danger of increasing the area of involvement in the Bronchial Tubes and in the lungs, because of exposure to cool or cold air. Needless to say, it is advisable to protect against

a direct draft because of the disturbance of the air pressure upon the tissues.

The evils of dust are exaggerated. Thruout the nose and upper air passages we have millions of hairlike projections that filter the air of all particles of dust and dirt. Did any of this dust reach the upper air chambers, the element of sneezing would immediately and violently expel the same. So that the fear of fresh air, on account of the dangers of dust being in the same, should have little or no place in the sick room.

In event of rain or stormy weather an excess of water in the atmosphere retards its absorption by the blood. Consequently, much benefit can be obtained by partially drying the air in the room by means of a fire. A simple procedure on a rainy day is having a gas jet or an oil lamp burning near the open window. In conditions where we have irritation and inflammatory changes in the air passage this is a decided benefit.

In conclusion, it should be kept in mind that the Cough or Cold may be nothing other than an early manifestation of a grave disease, and when the simple means fail to correct the condition a person should be alert for developments.

CHAPTER XII

Malaria

Malaria is a disease which is usually attributed to the tropics. While the character of the Malaria is usually more virulent in the hot climates, it is extremely prevalent thruout the Temperate Zone. In fact it is my conviction that of all diseases combined to which the human frame is subject, Malaria is the most abundant.

A book of this character will only permit of brief discussion of a disease, as it is written largely for the correction of sickness rather than a description of its symptoms.

Briefly speaking, Malaria is a blood disease. The germ (plasmodia) locates in the red cell of the blood and derives its nourishment from this cell. When the germ is ready to propagate it leaves the red cell and enters the blood stream. Here it breaks into various other germs and this is what is termed a paroxysm and the period when the patient has the chill. With more or less rapidity these new germs attach themselves to the red cells and when they are deeply embodied in the cell the interval of paroxysm is arrived at.

There have been isolated some twelve to fifteen different varieties of the malarial germ. It is what is termed the Protozoa Type. In other words, it

does not generate autogens or antitoxins that in themselves are destructive to the germ. Consequently Malaria is not a self-limited disease. The fact that it is a blood disease in which the red cell is being constantly destroyed requires no stretch of imagination to recognize that the results of Malaria are found in almost every organ and tissue in the body. The red cell is the oxygen-carrying cell of the blood and with diminished supply of oxygen, Anemia and degenerative changes are progressive and constant. The system suffers from oxygen hunger and exhaustion from the labor of introducing sufficient oxygen. Consequently, as the condition progresses and becomes chronic, exhaustion and fatigue are constant factors. The condensed air of the seashore affords greater oxygen and as a consequence these patients always improve in health and vigor when they approach the Sea-Level. It is a very common occurrence for the emigrant girls leaving home and coming into locations where the oxygen is less free as in urban localities, to become emaciated and depleted, and to lose their vigor and healthy color. So common is this that it is looked upon as usual, and, in many of the textbooks, described as the result of the ocean trip or travel. Fundamentally, these girls were affected with Malaria and in the open farm country were able to stand the depleted oxygen content, but in a lessened oxygen atmosphere became exhausted.

A conservative estimate of the presence of Malaria in some form among our population can be placed at thirty per cent. This is based upon close observation extending over many years, of the blood and spleen of my patients. Of this thirty per cent. it is fair to conclude that less than ten per cent. of them suffering from some form of Malaria recognize this disease as the cause of their depleted condition.

The acute manifestations of Malaria are known to all of us. The chill to a greater or lesser degree of severity, followed by the fever, then the sweat followed by the interval between the paraoxysm. It is my conviction that over fifty per cent. of the so-called colds that are relieved by a hot drink, a rest in bed and possibly five grains of Quinine, followed by a fairly efficient sweat, are nothing other than a malarial manifestation of a malarious attack. Some authorities class Malaria as a fall disease, coming largely thru the months of September, October and November. This is due largely to the fact that while the initial infection may be small in quantity it will require several weeks or even months, before it will develop and accumulate to be of sufficient severity to have a marked effect upon the human frame. *The bite of the mosquito, the bed bug, the flea or even the fly, may carry this germ.* Malaria may be carried from one patient to another by the patient having Malaria being bitten by some insect, and this insect in turn

biting another patient. Anything is liable to afford entrance of the germ into the blood, a scratch of a finger nail is ample avenue for the infection. From a Hydrotherapeutic standpoint the treatment of Malaria is to eliminate the Plasmodia and to increase the oxygen powers of the blood. *Nature has indicated that the skin, because of the relief afforded by the sweat in the acute stages, is the avenue of elimination.* The severity with which one undergoes the elimination of Malaria by means of the Hot Pack or the Hot Cabinet Pack should depend largely upon the toleration of the patient. *Free access to the air, as described in the use of the Hot Cabinet Pack and lying in a prone position,* frequently will enable the Malarial Patient to tolerate with comfort the Hot Cabinet Pack for four or five hours, and, in a fairly robust patient, considerably longer. Sunshine excites activity in the oxygen atoms of the atmosphere and with this increased activity the diffusibility of these gases is increased, with the result that increased oxidation occurs in the blood from inhaling these active oxygen molecules. (This is the reason why patients having Chronic Malaria always feel miserable in damp weather where there is lessened sunshine.)

It is a physiological fact that oxygen is combined largely in the red cell with Iron in the form of Oxyhaemoglobin, *and with destruction of the red cell, Nature is also deprived of its iron.* Apart

from the disinfectant action on the actual germ itself, certain herbs are capable of supplying increased iron to the blood. Because of this fact the Hydropath is justified in prescribing certain foods or certain so-called drugs as foods. Quinine stands prominent in this line. The former method as used by the South American Indian was to take a piece of the bark of the Cinchona Tree and boil it for many hours until a concentrated decoction was rendered. The same is true of the early Romans who boiled the bark of the Eucalyptus Tree to meet the ravages of Malaria. The North American Indian used the bark of the Hydrasta Plant. Aloes also, supply a fairly liberal amount of iron. So much benefit may be added to the Hydrotherapeutic Treatment of these conditions by feeding the patient these iron producing herbs. The boiling does not set free resins and consequently we have practically no toxic or depleting action from the watery decoction obtained by boiling the various barks. Iron and other tannates require that the bark be boiled for many hours. Pounding the Peruvian Bark or the Cinchona-Bark will aid in loosening up the fibers, Ground Cinchona-Bark more readily effects results. *These various barks should be boiled at least twelve hours and drawn off and fed systematically to the patient.*

Additional diet in Malarious conditions requires special attention. Keeping in mind the fact that every organ is sub-normal because of the anaemic

condition of the blood, the activity of these organs should be encouraged. These are the cases that, above all others, thrive on the Skimmed milk diet. After the cream has been removed from the milk these patients should be encouraged to drink freely of from one to five quarts of Skimmed milk a day. With the removal of the fats there will be practically little or no disturbance of the liver and intestines because of this food. The excess of water is directly stimulating to glandular activity thruout the entire canal, while the stomach and intestines should not be taxed, in their weakened condition, by being required to digest and assimilate heavy meals. Cooked starches, well sugared, should supplement the diet. It has been argued that because of the depleted condition of the blood, and the fact that the Glycogen coming from Nitrogenous foods is more easily oxidized than is the oxygen coming from Carbohydrates, the food should consist largely of meats, eggs, etc. Keeping in mind the fact that we desire, in these conditions, to maintain a fair degree of glandular activity, the arguments are againts the use of meat diet in Malaria. Meats, and eggs are fruitful fields for bacterial culture and with the depleted action of the liver ever present in Malaria, and secretion of the bile, which is the disinfectant of the intestinal canal, we are apt to supplement Malarious infection through Auto-Intoxication by the excessive use of eggs and meat. A fair routine in cases of Chronic

Malaria accompanied by Anaemia *would be the daily liberal drink of a decoction made from the Peruvian Bark and from two to six quarts of Skimmed milk a day, indulgence in cooked fruit and vegetables, and weekly, or semi-weekly, a three hour exposure to the* Hot Cabinet Pack. In acute conditions, however, where the patient is fairly rugged, the Hot Cabinet Pack should be promptly given and maintained for from five to seven hours, keeping in mind that *the patient be in a prone position and have free access to the open window.*

In treating chronic conditions it must be remembered that the tendency of this disease is *always progressive* and that the *subsiding* of the *symptoms is not a positive indication* that *all* the *germs have been eradicated,* and the treatment should be persisted in for weeks and even months. The symptom that should be the *criterion* in this case is the *sense of weariness.* Just so long as the patient tires easily and has a periodical sense of exhaustion, the treatment should be maintained.

As Malaria is so frequently the under-lying cause of so many conditions, I will reserve further information in the treatment of this disease to be included in the discussion of the other ailments.

CHAPTER XIII

Typhoid Fever

The treatment of Typhoid Fever by water has received more recognition than any other disease being treated by this method. It is now almost a uniform custom in the schools of learning to advocate the treatment of this disease exclusively by water, with the result that fatalities are now extremely rare, in contrast with former times when the death rate was fairly high. There is much criticism given as to the frequent uses of water as practiced in some of our institutions, and I will endeavor to discuss these improper uses of water in this Chapter.

Typhoid Fever is usually epidemical in character. Whever there is an epidemic of Typhoid and the patient begins to feel a grave sense of exhaustion with occasional slight chill and headache involving the entire head and nosebleed, the early manifestations of Typhoid should be suspected and precaution against grave complication undertaken. precaution against grave complications undertaken. The symptoms of Typhoid Fever are usually very conflicting during the first week. The sense of exhaustion is persistent and constant even when lying in a prone position, especially if accompanied

by headache, pain and tenderness in the region of the groin. Slight fever in the Fall or Spring of the year should excite suspicion of Typhoid and it is during these early manifestations that we can best modify the course of the disease.

Typhoid Fever is in reality an infection of the Glands (Peyers) found at the end of the Small Intestine and in and about the Caecum. A reference to the diagram of the locations of the digestive tract will advise the patient as to the location of these parts.

Another prominent symptom is the loss of appetite, the patient frequently finding all foods and the aroma of cooking offensive to him. With the early manifestations of this disease, rest in bed and abstinence from food is indicated. Water in the Alimentary Canal should be constant and abundant. The patient should first be submitted to the High Colon Irrigation, even if Diarrheal manifestations be evident. The daily use of the High Colon Irrigation will frequently render all manifestations of Typhoid Fever extremely bland. With the *abstinence from food* the *Osmotic pressure of the water in the digestive tract is directed more towards the cavity of the stomach and intestines up until it reaches* the Ascending and Traverse Colons, and in this way *the blood is drained from in and about the inflamed and ulcerated Peyers Patches.*

In practically ninety-five per cent. of cases of Typhoid Fever, following the use of the High Colon Irrigation, *the drinking of a glass* of Sterile Water, *every hour,* and *resting in bed* will render the condition bland. However, as supplemental to this treatment the use of the Cold Wet Pack, applied from the throat to the knees, over the chest and abdomen, and changed at every hour or two hours interval, will be ample to additionaly check the inflammatory changes in and about the Peyers Glands. It must be borne in mind that given opportunity, Nature will generate Autogens in this disease that are destructive to any other infection that may find entrance into the blood or the secretions, and not infrequently after the second week it is impossible to find any chemical or microscopic evidence of the disease in the stool, blood or urine. The period of *abstinence from food* should extend at least *four to five days* from the onset of the disease. At the expiration of the fourth or fifth day, Skimmed Milk diluted with Sterile Water will afford considerable nourishment and will not interfere with the Osmotic action we wish to maintain in the Alimentary Canal. Fats such as we find in cream are rapidly broken up into other component acids and are extremely irritating to the intestines. After ten days the diet should be largely restricted to well cooked Carbohydrates. The custom of feeding oatmeal gruel diluted with Skimmed Milk should be encouraged,

and well cooked and strained fruits are tolerated. Potatoes, baked and given opportunity to dry, and softened by Skimmed Milk or fresh Buttermilk can be given after the first week.

Frequently, the disease assumes a grave type before it is recognized. The ulceration in the Peyers Gland results in a serious Diarrheal manifestation, prostration, and congested conditions in and about the lungs and Bronchial Tubes, and not rarely the condition becomes recognized as Typhoid Pneumonia. The danger in these conditions is the possibility of the ulcerated glands perforating thru the walls of the intestine. These are conditions that require quite heroic measures. The Heart should be strengthened by the application of ice over the Apex. Osmosis should be encouraged by the use of Distilled Water and all foods abstained from. It is frequently impossible because of the rapidity with which the contents of the colon are discharged to practice the High Colon Irrigation. Supplemental to the Water used as food, Alcohol should be employed in these cases. The custom of giving the patient *a glass of* Distilled Water and a *teaspoonful* of Grain Alcohol and a Teaspoonful of Sugar at every hour or two hours interval should be practiced during grave stages. The benefits of this method of feeding has been discussed in the chapter on Pulmonary Diseases and requires no repetition here. Where the fever assumes a virulent type and the respiratory organs

are laboring markedly to obtain, oxygen, the General Cold Wet Pack is to be used in place of the Local Cold Wet Pack. This is simply because of the increased effects obtained. The custom of giving the patient a *Cold Tub Bath* cannot be too severely condemned. The shock of driving the blood internally by this contact with the water is dangerous. Again, with the reaction and in presence of water such as we have in the Cold Wet Pack, there is no opportunity for osmotic action or even sweat. The cold coil placed over the abdomen is also to be condemned. This custom was used when I was a student and its action is to drive the blood from the skin and maintain the blood from the skin, necessarily driving the blood into the internal organs and adding to the congestion. The fact that it lessened the pain in and about the region of the disease led many physicians to advocate it, not recognizing the fact that the prolonged cold was in reality a nerve sedative.

After the second week however, effort should be made to increase the oxidizing powers of the blood. It is almost a constant outcome that obesity and anemia follow Typhoid Fever. In the latter stages of Typhoid Fever, that is, after the third week and up until the fifth and sixth week, when the patient is up and about, the diet should be *almost exclusively proteid.* As I have described in a former chapter, the Glycogen derived from the proteids more readily oxidizes than does the Gly-

cogen derived from the Carbohydrates. After the third week the patient should be encouraged to drink freely of Skimmed Milk. As much as six to eight quarts of Skimmed Milk may be drunk with benefit. The gluttony characteristic of Typhoid conditions is in reality hunger, not because of the lack of food but because of the lack of the blood to oxidize the food ingested. As agreed by most competent Medical Authorities, fat is nothing other than sub-oxidized food that cannot be used and must be stored up. Needless to add, sunshine and moderate exercise in the open air have decidely beneficial powers of recuperation. Because of the fact that the oxygen is more condensed at sea-level these cases thrive better at the seashore than they do in the mountains.

It is my conviction that fully sixty per cent. of people who suffer from Typhoid Fever have an under-lying Malarious condition in the blood. The inability to properly oxidize in the blood affords better opportunity for the germs of infection to develop. As a routine practice all Typhoids, during and after their treatment, should be encouraged to obtain Vegetable Iron to increase their oxygen carrying properties. The routine practice of regularly taking a decoction from the Cinchona-Bark, as described in the treatment of Malaria, should be encouraged and maintained for at least four or five weeks after apparent recovery from Typhoid. The observation of these details always resulted in

a gradual restoration to normality without the development into gluttony and obesity in Typhoid.

The custom of visiting people suffering from Typhoid must be condemned. Fundamentally, these patients, from the very conception of this disease, are exhausted and prostrated, and any additional labor or excitement only adds to their prostration.

With the preparation of Cinchona-Bark, as described in the chapter on Malaria, there is practically no interference with Osmosis of Plain Water and where there is a suspicion of possible Malarious involvement the use of this decoction should be encouraged from the very beginning of the disease. Where it is possible, moderate massage over the Gall-Bladder to insure a fairly copious discharge of the bile is to be encouraged, but frequently the tenderness over the abdomen will not admit of this treatment during the early stages. However, after twenty-four hours exposure to the Cold Wet Pack, we usually find that the patient will tolerate moderate massage over this organ with little or no discomfort. The disinfectant action of the bile unquestionably has decided action in checking the growth and activity of the Typhoid germ in the intestines and in the glands. During my student life Typhoid was very common in the Borough of Brooklyn, epidemics being present with due regularity every Fall, and I persuaded my preceptor to use Podophyllin for

the effect of increasing the flow of bile in these cases in order to obtain the disinfectant action of the bile upon the affected area. Pepper subsequently reported a number of cases of marked benefit from this form of treatment. Strange as it may seem, *altho laxative in its action, the use of Podophyllin resulted in rapid correction of Diarrheal manifestations.* It has been my experience that where I have been able to affect proper discharge of the bile and maintain its active circulation the disease became rapidly aborted and not infrequently would be of but two weeks duration. The access to air is very essential thruout the tntire course of the Typhoid disease. This will prove a splendid preventive agent to hold off any threatening pneumonia, the abundance of oxygen in the lungs holding the disease producing germs in the air passages in check.

With the first evidence of irregularity of the heart the ice bag should be applied over the apex. At fairly regular intervals, in conditions where the vitality is low, oxygen should be inhaled, keeping in mind not only the increased vitality which it affords but likewise its disinfectant action upon the air passages and chambers.

CHAPTER XIV

Typhus Fever

In Typhus Fever the symptoms are more abrupt and more virulent than those of Typhoid Fever, but fundamentally the treatment must be to render the case benign until Nature has had opportunity to generate Autogens to destroy the infection.

Constipation in these cases, with distention of the abdomen, is the rule and the High Colon Irrigation should be practiced with more frequency than in Typhoid. The use of the High Colon Irrigation should be practiced twice in twenty-four hours. The vitality of the patient is at the minimum around midnight and the High Colon Irrigation should be given approaching this hour to moderate the depression which comes at that time. In these cases the bed-pan should be used and the High Colon Irrigation given in the bed by placing pillows under the abdomen, the hips can be elevated and usually the irrigation can be prolonged with comfort until the Transverse Colon is flooded. In this disease the liver is prominently affected and the benefits of the High Colon Irrigation thru reflex stimulation and functional activity of this organ are pronounced. Where it is possible to do so without exciting too much distress, evacu-

ation of the Gall-Bladder has decidely salutary effect. Frequently the Local Cold Wet Pack will be ample to relieve all internal congestion, but occasionally the attack will be so virulent that the Complete Cold Wet Pack is necessary.

From the very conception of this disease Water should be drunk freely with Alcohol added as described in a former chapter, and solid food must be vigorously abstained from during the first four or five days. Between the periods of High Colon Irrigation much benefit will be obtained by introducing the colon tube into the rectum and affording further escape of the gases from the intestines. Collapse should be guarded against by the use of the Local Ice Pack over the Heart, and Oxygen, in grave cases, should be administered at frequent intervals.

The Autogens in this disease are far more rapid in their development than are the Autogens in Typhoid Fever and the grave danger is during the early stages, in contrast with Typhoid where the grave danger is in the latter stages of the disease.

The same general rules as in Typhoid Fever should be practiced in Typhus Fever.

CHAPTER XV

Rheumatism

Pathologists and Clinical Experts are still at a loss to know whether urate of soda is the cause or the result of Acute Inflammatory Joint Rheumatism.

All urates are excreted by the kidneys. Therefore, when the kidneys fail to excrete the urates as they should we find an excess of them deposited in the tissues and in the joints. Nature is kind enough to dilute these urates by an excessive secretion of the synovial fluid of the joints. Thus we find, as a general rule, that the affected joints are tense, swollen and red.

The Hydropath must consider three factors in the correction of Rheumatism:

(1) The source of the supply of the urates.
(2) The normal elimination.
(3) The supplemental elimination.

The source of the formation of urates is usually within the intestinal canal, and is due to infective material generated there. The failure by physicians to study more closely the relation between the intake and the output, (the meals and the stools) has deprived us of much information as to the quantitative as well as the qualitative action of digestion and absorption.

The general belief among the Laity and Physicians as to the evils of meat and other proteids in Rheumatic conditions is not well founded for Skimmed Milk, which contains large quantities of readily assimilated proteir, is in fact the ideal diet for Rheumatism. The evil results of rich proteid diet in Rheumatism are remote, not direct. However, most Physicians and Laymen have an exaggerated idea as to the ease and completeness with which meat is digested. Only from five to fifteen per cent. of boiled meat is affected by digestion; but meat has another fault in that it is very bland in the stomach and intestine, and promotes directly and reflexly very little organic activity.

Coarse vegetables, on the other hand, *mechanically stimulate muscular and secretory activity of the organs of digestion,* while at the same time their *vegetable acids also promote functional activity.* In this way vegetables favor the elimination of the waste products of tissue change, stimulate excretion, and cause the removal of large quantities of inorganic and organic salts—*these latter thru the active flow of bile.*

Bile not only is a prominent medium of elimination, but, by reason of its strong alkalinity, checks fermentation, and in this respect is a disinfectant, moderating putrefactive changes in the small and large intestines. *Because of this action of encouraging the flow of* Bile, *the preventive effect*

of raw vegetables and raw fruits in checking Rheumatic conditions is clearly shown.

Before dismissing the question of proteids, I wish to say that the presence of animal coloring matter in the meat has little, if any effect on digestibility. *To differentiate between red and white meat is merely a matter of pigments, and has nothing whatsoever to do with dietetics. The structure and chemistry of white meat, or meat in which there is an absence of pigment, is practically identical with that of red meat.*

In bringing about the cure of Rheumatic conditions the primary effort must be in the direction of *eliminating the waste products* thru increased activity of the bile flow, and *of moderating the fermentation or decomposition in the Alimentary Canal.*

It must be borne in mind that there is a close relationship between the activity of the intestines and that of the Gall-Bladder. While the activity of the intestines, as a rule, is reflexly stimulated by action of the Gall-Bladder, yet the reaction is equal. Therefore, activity of the intestines to some extent helps to evacute the Gall-Bladder, thus throwing off the waste products excreted by the liver and promoting the checking of putrefying changes in the intestinal canal.

The action of the High Colon Irrigation, locally, promotes a cleansing of the large intestine, and

reflexly prompts the expulsion of bile from the Gall-Bladder into the intestine.

In Rheumatism this High Colon Irrigation should be practiced with a fair degree of regularity. The night and morning use of the Irrigation will, as a rule, be found sufficient. Again, the presence of the excess water in the blood, thru its Osmotic Absorption in the Ascending Colon, not only liquifies the bile and washes out the poison, but it also stimulates the kidneys and the sweat glands to increased activity. This assists the elimination of the waste matter.

Furthermore, in a large percentage of cases, an actual retarding of Bile from the Gall-Bladder will be observed. In fact it is characteristic with Rheumatics that the stool *is deficient in Bile Salts.* In these cases evacuation of the Gall-Bladder and its stimulation to activity should be promoted by Manipulation of the Gall-Bladder, as described in the chapter on Diseases of the Intestines. This simple procedure should be repeated, *following lavage of the colon night and morning.* The rapidity with which relief will be afforded by such measures *is remarkable.* Frequently all symptoms of Acute Rheumatic Infection *will disappear within forty-eight hours.*

The hourly drinking of Distilled Water constitutes a splendid adjunct to this treatment. The affinity of Distilled Water for vegetable acids and

mineral salts promotes their absorption and elimination thru the kidneys.

In cases where the results are not sufficiently prompt, a Hot Dry Pack, to assist in the elimination thru the activity of the sweat glands, will prove very efficient in supplementing the other treatments. This Pack *should be maintained* and the sweat prolonged *for a minimum duration of five hours.* Rarely will it be found necessary to repeat it, but, if repeated, it should not last more than two or three hours, at the outside. The usual directions in the use of the Hot Dry Pack require no modifications for the treatment of Rheumatism.

Note the fact that Rheumatism is generally nothing but the abrupt manifestation of a Chronic Underlying Condition. The aim of the Hydropath is to remove the cause, not to mask the symptoms by the administration of salines or remedies such as the salicylates.

The patient should not retard or complicate the use of Water in curing Rheumatism by taking drugs, which will merely deter Hydrotherapy from doing its work. When the pain is intense use the Hot Dry Pack. This will afford relief almost simultaneously with the appearance of the sweat.

The diet during and following an attack of Rheumatism calls for special attention. It should be of a character calculated to promote an active flow and excretion of the bile. Certain fruits have a decided cholagogue action—that is they increase

the flow of bile. A compote composed of *rhubarb, apples and oranges,* cooked together and strained, then boiled again with the addition of sugar, has proven very efficient within my knowledge in increasing the discharge of bile.

Thru their *Mechanical irritation,* spinach, lettuce, beet-tops, knob celery, turnips, potatoes, raw fruits (with the exception of the strawberry) bananas, apples, pears and cooked peaches have a beneficial influence in increasing the activity of the liver functions.

On the other hand, onions, garlic, strawberries, tomatoes, cucumbers and radishes, because of their intense irritating properties, are prone to excite a spasm about the pylorus, and thus close the opening of the bile duct into the intestine. The same is true of pepper and strong spices. I have seen a number of cases where the clinical history and subsequent developments prompted me to arrive at the conclusion that the specific cause of Rheumatism was an irritation resulting from the pyloric spasm induced from the use of whiskey and onions. This spasm interfered with the opening of the Gall-Duct to the intestine.

The persistent and excessive use of coffee cannot be too strongly condemned. It conduces to Rheumatism, not only thru its action *on the stomach nerve periphery, but also because of the way it retards the cellular, or secreting, activity of the liver.*

The great danger, ever present in Rheumatic conditions, of involving the lining and valves of the heart is promptly relieved thru the efficient Hydropathic methods of elimination, *in strong contrast with ordinary medical treatment.* Rarely, indeed, will there be any involvement of the heart where these therapeutic measures have been promptly and efficiently followed.

In Chronic Rheumatism, the functional activity of the liver must be vigorously maintained. For this reason, *the diet should be largely, if not exclusively, vegetable. Distilled Water should be drunk freely every morning.*

Rheumatic conditions are greatly benefited by regular indulgence in a long, Hot Tub Bath. The Osmosis promoted by the water directly drains the blood of many of its unsatisfied compounds and mineral salts. As a rule, these baths should be taken immediately before bedtime, followed by rest in a warm bed, or by sleeping between blankets. The duration of the baths should be an hour or thereabouts.

The so-called mud baths have no value over the plain water bath. Their action depends solely upon water and rest. In fact, physically speaking, the benefit of the mud baths is decidedly inferior to that of the plain water bath, except in those local diseases in which some aluminum or radium in the mud affords a curative action upon a diseased skin.

Massage in Chronic Rheumatism is mildly efficient, in that its electrical stimulation promotes normal activity in the tissues, both local and remote. Also, by its effect on the skin, it promotes more active secretion of the sweat glands.

The relief afforded by a dry climate as contrasted with the distress in a moist atmosphere is owing solely to the rapidity with which the sweat is stimulated and evaporated in the dry, hot air.

The Hot-Air Cabinet Treatment of Chronic Rheumatic conditions is also of great therapeutic value. Its regular use by elderly people should be encouraged. The duration of the exposure, however, should never exceed one hour, and the patient should always have access to cool, fresh air for breathing, thus avoiding the strain upon the heart and lungs from inhaling hot, light, dry air.

The observance of these rules in all cases of Rheumatism will afford prompt relief from the acute symptoms, and, if persisted in for a sufficient length of time, will bring about a thorough and effective cure.

CHAPTER XVI

Digestive Diseases

Before reading this chapter I would ask my readers to turn back to the little chart of the various divisions of the digestive tract, so that when I refer to these divisions they will be familiar with their locality. (See page 90 and page 223.)

The close relationship among all anatomical divisions of the digestive tract, as well as the supplemental organs of digestion, that is the liver and the Pancreatic Gland, make it more or less inaccurate to speak of any disease as being exclusively confined to any particular division or location in the Alimentary Canal.

It must be kept in mind that Nature, in order to effect proper means of digestion, excites contraction at various sections of the digestive canal, and, were there no contractions thruout the canal, it would be nothing other than a tube varying from three-quarters of an inch in diameter in the esophagus to about two and one-half inches in the colon.

The general conception is that the stomach is always large, in fact some Medical Authorities place its contents as high as two quarts, but that is erroneous. In infant life the stomach is more vertical, and, in reality, is merely an enlargement of

the canal and disappears after the food enters the intestine. As we progress in age this enlargement becomes more and more prononunced, and it is not infrequent to find a stomach measuring fifteen inches in length and the transverse diameter approaching six to seven inches. This condition is present in fairly healthy normal stomachs.

Cunningham demonstrated that, in proper contraction, the stomach in reality was one of the narrowest parts of the canal, and that the *autopsy was not the proper guide as death had failed to contract the stomach muscles.* By making a series of parafin molds with the stomach thoroughly contracted he proved that the stomach was reduced to a transverse diameter approaching one inch, and a longitudinal diameter slightly in excess of two inches.

Thus it can be readily seen that the constant dilating of the stomach, with food and gases, as a general rule, results in a weakening of its muscles and in an inability to contract to its fullest extent.

Unquestionably, the *great benefit* obtained by a *starvation diet,* as advocated by MacFadden and others, is attained by permitting the stomach opportunity to *contract to its fullest extent.* The *contraction* of the stomach is a matter of *greatest importance* in the correction of all *digestive disturbances.* With the full contraction the pylorus or constricted circular fibers at the end of the stomach become relaxed, and we have virtually a

straight tube, with no constriction, enabling liquids to move fairly freely directly into the intestinal tract.

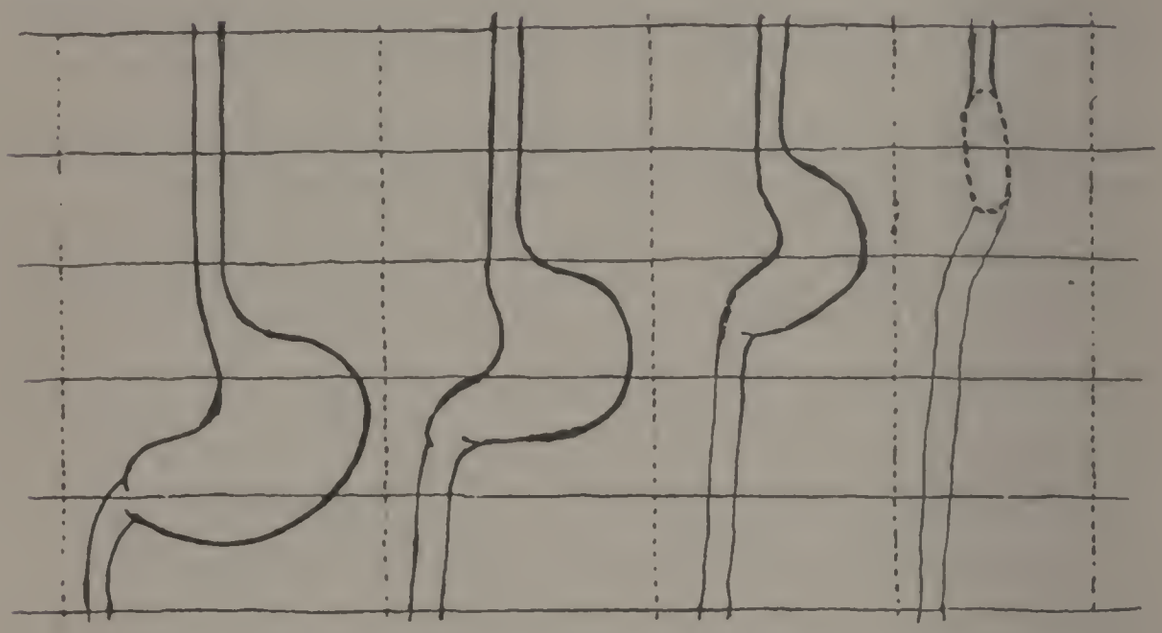


Diagram Showing Contraction of Stomach

It must be understood that with the contraction of the stomach the longitudinal muscles also contract, so that not only is the stomach contracted as far as its diameters, but it is likewise contracted upward. Let me discuss this a little more fully as I find that a great many of my patients have been skeptical of the ability of the stomach to remain in place. Unlike all voluntary muscles, there is practically no bony attachment of the muscular fibers thruout the Alimentary Canal, and these fibers merely find their attachment to other similar fibers above and below. The contraction of one fiber promotes the contraction of the adjacent fiber and so on until we have a general contraction in and about the region of the stomach. Thus is

it that a stomach that may lie in the region of the navel, when fully contracted, will be found between the fifth and the seventh ribs.

Naturally, the original massage to promote the contractive power is necessarily more thorough and more severe, the subsequent massage will become less and less pronounced, and the means of maintaining the stomach in its normal position can be arrived at by frequent and simple massage by the patient himself.

The proneness of muscular, motility, or motion disturbances in the stomach, to inflammatory changes in the lining membrane is about fifty to one; so, in other words, practically the primary lesions in the stomach conditions are those of motility, and inflammatory changes are secondary, dependent upon the deranged motility.

This fact will probably be disputed by most Gastrologists, and I am asking the reader to be patient while I discuss this matter. Assume the situation where the motility is natural or normal; an irritating substance has two avenues of explusion—thru the mouth or into the intestines. The Hydrochloric Acid in the stomach is an efficient disinfectant capable of checking decomposition from bacteria. The secretion of saliva is abundant in all irritating conditions in the stomach and we have the diluent effect of this fluid to render the infection or irritation bland, so that, in substance, Nature has afforded splendid protection for the

mucuous membrane in the stomach. On the other hand, we are fundamentally animals and our structure has to meet the demands of the cultivated or civilized animals. The animal instinct is to gorge oneself, followed by prolonged rest in order to digest the enormous indulgence. This is more particularly in the omnivora than it is in the herbivora or in the carnivora, because of the fact that, with the abundance of starches or Carbohydrates being checked by the Hydrochloric Acid, far greater rest is required to digest the starches, since physical activity delays the digestive changes.

The civilized custom of preparing the foods for digestion thru the process of cooking, and the custom of eating three or more times a day, is in direct conflict with the mechanical arrangement of the stomach. In reality the stomach is a churn having vibratory as well as contracting power. It has been estimated that there are as many as 1760 vibrations to the minute in the stomach during digestion, and as many as ten to thirty contracting motions in the stomach following the meal. As a result, from earliest childhood we have been trained to lessen the period of relaxation following the expulsion of food into the intestines.

The empty feeling which comes to us as the result of contraction is an indication of hunger to most of us. With this state of affairs, constant from childhood, it can be readily understood that the contracting power or motility of the stomach

has become progressively weakened. It is a common thing for me to find patients who will thrive on two meals a day, one meal in the morning and one in the evening, and who suffer marked discomfort if they indulge in a noon-time meal. *As we progress in age we should increase the periods between the meals and,* as supplemental to this, we should *resort to artificial means,* that is *massage, to promote the contracting power of the stomach.*

In considering the question of Massage of the abdominal organs, we can brush aside as absurd the so-called dangers of rough massage. The walls of the abdomen posterially above and below are protected by strong bony structure. The abdominal organs are protected in the front of the abdomen by a strong apron of fatty tissue and a strong band of muscular fibers and tendinous tissue, and it is physically impossible, with ordinary pressure, to exercise sufficient force to injure any of the internal organs.

It is also highly important to appreciate the fact that the fluids, soft tissues, and organs of the abdominal cavity make their contents highly fluid, and any pressure exerted upon this cavity from without, to a greater or lesser degree, is Hydraulic in character. In fact, because of this Hydraulic condition most of my manipulations are remote and indirect.

The abdominal contents *always have a tendency to displacement downward.* The erect position in

which we walk and perform our work, thru the force of gravity, tends to produce this, while again the diaphragm, as a rule, is of such a strong fibrous nature that it permits of no upward displacement. With this in mind, *all massage pressure must be exerted upward.* Again, the posterial wall, as well as the upper wall, of the abdomen is always rigid in contrast with the relaxed front wall of the abdomen, and consequently, the *displacement tends toward the front of the abdomen.*

The patient or individual, *lying on his back with his knees flexed to afford relaxation of the abdominal muscles, not only places himself in the best position to receive massage but also assists in that the force of gravity tends to return the organs to their normal positions.* These facts are true, and all pressure must be directed backward and upward towards the diaphragm because of the Hydraulic pressure. To a greater or lesser degree all manipulations are distributed thruout the abdominal cavity, more especially if we add rigidity to the front part of the abdomen by exerting the pressure with the entire palms of both hands.

The object of massage is twofold. First to replace the organ, and second to stimulate the activity of the motor generating nerves in the walls of the stomach. To obtain the first object I use the forcible lateral motion, standing to the right side of the patient and forming my both hands in a bent-hook shape, I throw the abdomen from left to right

and then push it with the palm of my hand from right to left; the third stroke being upward, gathering as much of the abdomen as I possibly can gather in both hands and with sudden force push it upward. The object of the first motion is to relieve any kink that may be in the intestinal canal, and the object of the second motion is to relieve any tension or pressure that may hold the displaced organs out of position. I repeat these motions four or five times, and then begin my supplemental circular motion. The circular motion has for its object the stimulation of the motor generating nerves within the walls of the stomach and intestines. Various authorities differ as to the point where we should begin. Such an authority as Dr. Holm advises beginning on the left side, rotating in the direction of the rectum. On the other hand, Prof. Boas, advises beginning on the right side over the Ascending Colon and gradually approaching the rectum. It makes no difference in my opinion where you begin or where you end, so long as you obtain this repeated motion thruout the entire canal.

It is usual and common, after the first three or four minutes of manipulation, to feel the contraction of the stomach and intestines in your hands.

While at first the patient may experience a sense of soreness in and about the abdomen this will gradually disappear, and as the kinks are removed and muscular activity becomes more pronounced

a sense of relief will be experienced by the patient. In fact with the contraction of the stomach the irritation in the Solar Plexus is relieved, the respiratory action becomes less labored, and the patient experiences a sense of exhilaration. The duration of the massage should be guided by obtaining too little rather than too much. I frequently advise my patients *to give their stomachs a slight massage every time they think of it, even if this be one hundred times a day, keeping in mind the fact that the muscular condition of the stomach and the intestines is the outcome of years of development.* However, an abdominal massage should never be less than three to five minutes duration.

The benefits of vibratory massage or the application of the vibrator over the abdominal wall is a *splendid adjunct to abdominal massage* after the organs are replaced to their normal positions, but *it is a grave menace before this.* It is becoming a matter of routine in the Sanitarium that subsequent to the replacing of the organs we apply the vibrator, covered with a soft rubber appliance, over the Pylorus. This has a decidedly sedative action on the Vagus Nerve (Solar Plexus) and naturally aids in the relaxation of this part of the stomach. When the stomach is contracted the Pylorus will be found high up in the angle below the ribs and the breast-bone.

It requires no stretch of imagination to recognize that stomach rest is a splendid adjunct to

correct the motility disturbances, but very frequently, in fact in the vast majority of cases, *emaciation exists to such a degree that nourishment, even forced nourishment, is imperative.* However, it is of splendid assistance to relieve inflammatory changes in the membrane of the stomach and intestines by having the patient or individual *drink freely of water* (a glass) *immediately after massage.* The result of this is twofold. First, the Pylorus being obliterated and the stomach contracted mechanically, the water washes the stomach contents directly into the intestinal canal. This fact will unquestionably be a source of surprise to a great many physicians, but the stethoscope over the Pylorus will reveal the gurgling of the water as it passes through the Pylorus into the intestine. Second, *the Osmotic action of the water,* not only in the stomach but in the upper intestinal tract, relieves the congested condition in these organs.

While it is impossible in a Work of this nature and in fact in any Medical Work to draw a distinct line between the various diseases, I will give a short description of the means of correcting the most common of digestive diseases by the application of these Hydrotherapeutic principles.

HYPERACIDITY—SOUR, BURNING STOMACH

The Medical Textbooks devote a great deal of space to the discussion of this disease. So com-

mon is it that a fair estimate of the money spent on Bicarbonate of Soda, alone, for its correction would exceed ten millions of dollars a year.

In reality, sour, burning stomach, Hyperacidity, Acidosis, are really nothing other than manifestations of derangements in the stomach. If I were to name one cause as standing out prominently as the exciting cause of this condition, *I would name coffee.* Coffee contains a powerful nerve sedative, caffeine. Caffeine is capable of checking the muscular activity and delaying the food in the stomach and this, reflexly, excites the increased flow of Hydrochloric Acid in the stomach (Butyric and Lactic Acid formation) which forms more actively than in the presence of bile. Consequently we have a condition of excessive acids. On the other hand, Nature, in her efforts to protect the intestines from irritating substances coming in from the stomach, excites undue contraction of the Pylorus, and further retards passage of food into the intestine. Stimulating and irritating foods are frequent causes of this. The Sulphur compound of the onion, leek, and garlic, now almost universally used in the restaurants, etc., to season our meats and other foods; peppers, condiments, as well as the acids of the radish, horseradish, cucumber, tomatoes, strawberries, and occasionally peaches, *are all irritating and stimulating to the stomach glands,* and the avoidance

of these foods should be the very first step in the direction of cure for this condition.

The subject of Nicotine is one on which I have frequently been questioned. The amount of Nicotine that is deposited on the fauces and upper air passages is very minute. However, we have a very considerable deposit of carbon from the smoke which does excite the excessive flow of saliva, and it is my rule to advise patients to abstain from smoking until the acid has begun to flow in the stomach and the digestion of starches from the saliva has ceased,—that would be about twenty minutes after a meal. This observation, I believe, will relieve us of any menace of Hyperacidity resulting from a moderate indulgence in tobacco.

The question of the Milk Diet in these cases has been so strongly advocated that I consider it imperative to discuss it here. In the presence of Hydrochloric Acid the emulsification of the fats in the milk is destroyed and their value as a food decidedly lessened. The casein is more active and promotes almost a condition of saponification, which practically destroys all the nutritive value of the milk beyond the water. In addition, frequently because of such texture, it is retarded in passing thru the pyloric opening into the intestine. On the other hand, removing the fats by means of skimming the milk or removing the cream, or removing the fat by means of churning, goes a long way towards correcting this outcome. Consequent-

ly in conditions of Hyperacidity *the nutritive value of skimmed or fresh butter-milk greatly exceeds that of fresh milk* and we escape the unpleasant outcome.

I have classified butter-milk by saying *fresh* butter-milk, that is—butter-milk from the milk that has been churned — not soured. In other words, the Hydrochloric Acid in the stomach will check the Lactic Acid formation. The Lactic Acid development is very readily formed in warm churned milk, and it is a foreign substance in the stomach capable of irritating and exciting inflammatory changes in the mucuous membrane. *The artificial form of butter-milk* made by an innoculation of the lactic bacillae *must be avoided.*

It must be kept in mind that the mixing of different foods has the tendency for each to render the other bland, while again it affords Nature a much greater field of substance capable of being converted into Glycogen. For this reason it has been my rule in these conditions to prescribe *a liberal mixed diet,* composed namely of well cooked or boiled food, both meat and vegetable.

It must be borne in mind that Nature is so constructed that she responds to practically all of the demands placed upon her, and foods that in themselves require exceptional digestive powers, with the consequent increased flow of Pepsin and Hydrochloric Acid, should be avoided. Consequently, fried foods, because the process of frying gener-

ally toughens the fibers and renders them less soluble to the digestive juices, should be avoided. The seeds of fruits, the kernels of nuts, foods that have been preserved by a chemical preserver, such as prunes, figs, dates, raisins, and prepared cereals, especially oatmeal preparations, should be avoided. Alcoholic beverages, if spiced, such as cordials, cocktails, etc., are too stimulating. Bland beers and mild sweet wines, can be tolerated.

Where the patient is well nourished, complete stomach rest is very essential to promote recovery. However, the restraint from all food should never exceed seventy-two hours. Contraction of the stomach by means of efficient massage is the most reliable means of correcting this condition. This should be supplemented by the drinking of cold water, especially in the morning upon arising. *A pint of cool water from the faucet,* accompanied by *vigorous massage* until the gurgling is heard as the water passes from the Pylorus into the intestine, and *an observance of the diet* I have just given, *will be found sufficient in all* uncomplicated primary *cases of Hyperacidity.*

However, this must be persisted in for several weeks, and massage must be practiced at least twice daily with occasional slight massage during the working hours.

It must be remembered that rarely is Hyperacidity uncomplicated by inflammatory changes or derangements of the motility. In fact it is prac-

tically impossible to have a functional derangement of the glandular element of the stomach, without affecting the actual membrane itself and the motility of the muscular coats. Again, a very large percentage of these cases, to a greater or lesser extent, are dependent upon some remote cause.

If, however, the observation of *this diet with massage and the copious drinking of cold water in the morning on rising* does not afford *complete recovery,* you can be confident that there are some *underlying complications* to be met. As I said at the beginning of the discussion of this ailment, Hyperacidity in itself is rarely other than a complication of different conditions.

The physiological fact that Hydrochloric Acid is no longer poured into the stomach after the food is emptied into the intestines, should prompt us to indulge in moderate exercise following the meal. The jar of walking in itself is a form of stimulation to the muscular coats of the stomach, and when not too vigorously indulged in, so withdrawing the blood from the digestive organs and the muscles of the limbs, materially aids in affording prompt evacuation of the stomach contents.

However, such pronounced excercise as running, playing ball, horseback riding, on a full stomach requires too much muscular effort, and retards digestion by withdrawing the blood to the muscles engaged in exercise.

Acute Gastritis

In infancy the rule is for a child to have a little colic, and upon vomiting, shortly to obtain relief. In a previous chapter I have described the processes of vomiting when irritating substances reach the stomach, and it becomes weakened as we progress in age unless the art of vomiting be cultivated. It is an art which should be encouraged by everyone. Let us discuss in a broad understandable way what the stomach is called upon to perform. Take the common slop pail, and put into it the ingredients that are usually found in the stomach after a meal. Into this pail we will throw several million yeast cells and sarcinae, and about twenty-eight different varieties of bacteria that are found in and about the mouth, and upper air passages. Add to this a pint of saliva, a cocktail, a cordial, a lot of onion juices, a lot of garlic, soups that contain particles of animal matter and ninety-nine per cent. water and a little salt, include a fruit cordial, and after this cheese, some lobster a la Newburgh, followed by four or five different kinds of vegetables well immersed in cooking fat (lard). Throw in a lot of cooked sugars, eggs and flour, dump in on top of this certain quantities of coffee, a little Burgundy or a little more of the cocktail, to this adding a little Ptyalin, then Pepsin, a little Hydrochloric Acid, heating it all to a temperature of 100° Fhr., then

shake it back and forth, collecting all the gases that are generated, and we have a sort of modified idea of the work that the average human stomach is called upon to perform.

We often marvel at the digestive properties of the Ostrich, but he is purely and simply a herbivora, and will spend from a day to a month in digesting his food. Take the common barnyard chicken. The corn will be found in its crop in practically an indigested state fully a week after it has been ingested, and yet the human stomach must empty itself and re-charge with food practically every three or four waking hours. Again, the Ostrich and the Chicken are actively walking and picking, while, only too frequently, warming the rocking-chair or desk-stool is the main exercise with the human.

With a vision of circumstances somewhat similar to these, the hesitancy of affording free avenues of escape when the stomach becomes acutely affected can be somewhat prevented. In other words, there should be no hesitancy in all acute conditions of the stomach to evacuate this organ freely and thoroughly. Very frequently the prompt evacuation of the stomach thru vomiting or by means of the stomach tube, will result in complete relief and practically cure the attack.

It is highly advisable to encourage vomiting by adding to the fluidity of the stomach contents. The more fluid it is, the more readily it is expelled,

fluids requiring little peristalic movement in the esophagus to be expelled, in contrast with the solid particles of food. Just so long as vomit is free no additional means is required. However, *it is advisable to drink freely of warm water.* A pint of warm water toward the end of a vomit, thrown freely off will not only cleanse the stomach but will render the acids of decomposition more bland. The custom of tickling the fauces by means of the finger and depressing the tongue is familiar to all of us. *Vomiting should be continued in spite of the temporary prostration which it may excite.* Contrary to the general opinion that the straining of vomiting is dangerous, the fact is that, with the expulsion of the food and gases from the stomach, *the heart is afforded relief,* not only from pressure but reflexly from the Solar Plexus; the irritation is lessened and the dangers of the strain are far less than those of an attack of Acute Gastritis.

It is of no consequence whether the cause of Acute Gastritis be bacterial or chemical, *free vomit or the free use of water are indicated.* In cases of poisoning from corrosives the chemical antidote should be used. In these cases the great benefit of using milk is largely because of the water it contains diluting the corrosive. The various chemical poisonings will be discussed in a future chapter.

The ideal treatment of Acute Gastritis after emptying the stomach by means of vomit is to

thoroughly cleanse it by means of the stomach tube. Rest is very important. The shock of Acute Gastritis deranges the motility of the stomach and prolonged rest should be effected in order to enable Nature to assume normal muscular activity in the stomach. The twenty-four to forty-eight hours complete rest following an Acute Attack is indicated. Where the pain is intense it is strongly advisable to correct the spasm by massage and withdraw the congestion from the parts by means of the Local Cold Wet Pack, *spread over the chest and abdomen.*

It must be kept in mind that the inhibitory nerve of the stomach is also the inhibitory nerve of the heart, that is, branches of the Vagus Nerve spread over the heart-wall as well as over the stomach-wall, and that any stimulation of this inhibitory nerve in the stomach excites inhibitory impulse of the heart. The great weakness that follows a blow in the stomach (Solar Plexus) is illustrative of this, and the heart palpitation that is experienced by dyspeptics is another frequent illustration. So that it must be recognized that extremely rare is it that Acute Gastritis is not accompanied by *acute dilatation of the stomach.* Therefore, in all cases of Acute Gastritis after the stomach has become thoroughly cleansed and emptied, massage should be practiced with considerable force.

Unfortunately there is a wide-spread opinion among Physicians as well as the Laity that the

sense of "goneness" experienced when the stomach is fully contracted is evidence of weakness requiring food. This prompts too early an indulgence of nourishment, so much so that probably 60 per cent of conditions of Acute Gastritis in the adult, all to a greater or lesser degree become chronic. In other words, the progress of Acute Gastritis in the average adult *is progressive,* increasing its involvment of tissue in the majority of cases.

Practically all deaths of Acute Heart Failure and Apoplexy are in reality nothing other than manifestations of Acute Gastritis; the heart being unable to withstand the derangement, excited by the irritation of the inhibitory nerve of the stomach. Thus, it can be recognized that *as we advance in age we should first of all put as little tax upon the stomach as is possible,* by the use of simple, light meals at infrequent intervals and at the earliest manifestation of distress should have developed the art of emptying the stomach either by vomit or the use of the stomach tube. *The man of* 60 *years* should never eat more than *two meals a day* and they should be *as far apart as possible.* The man of 50 years should eat much less than the man of 40, and after adolescence, that is about the age of 25, our food indulgence should become progressively more moderate, not only in bulk but also in character.

The attempt to regulate the diet by an estimation

of the calories is no panacea in the art of nourishment. In other words, both meat and vegetables, cereals and, all forms of food are capable of forming Glycogen or fat, and the extent with which they are capable of forming fat from the chemical contents of the food is the estimation of the calories, but the chemical content of the food, and the chemical content of Glycogen are indeed removed. The conversion of the calories of the food into Glycogen depends upon fully one hundred or more conditions. Food that will on one occasion react to the digestive juices will on another occasion pass thru the canal unaffected. There is no constant digestion of any one article of food. Roughly speaking, from five to seven per cent. of meats are usually broken down and neutralized, sixty to seventy per cent. are cooked starches with practically no fibrous matter, and chemical salts 2 per cent., but these are not constant. I have frequently examined the stool, and found meat in a fairly normal condition of the stomach and intestine, not only in its same structural condition, but containing the meat juices and the fat contents. *The use of artifical digestants affords practically no benefit,* and by substituting the natural element by the artificial element we modify the demands upon the stomach, and in this way are apt to undermine the activity of the glandular substance. In other words, the dry powdered stomach (Pepsin) of the pig, while it may contain some

Peptongenic Enzyme (ferment), is merely a substitute and its ultimate action tends to produce a lack of activity in the glandular element in the stomach.

The irritation of the Vagus Nerve or the inhibitory nerve of the muscular coats of the stomach, that is always accompanied by Acute Gastritis, retards muscular contraction with the result that the constant accompanying factor of Acute Gastritis is Gastric Dilatation. In other words, the longitudinal muscles are prevented from contracting and we have the stomach increased in length. Reflexly, the same condition is true of the esophageal longitudinal muscles and as a result the stomach is dropped down. The same action is directed upon the circular muscles of the stomach with the result that the lumen of the stomach is enlarged, and with the enlargement of the stomach and the delayed muscular activity, the relative approach to the Pylorus or constricted part of the stomach is much increased, and in this way the evacuation of the food from the Pylorus into the intestine is markedly retarded. This condition as just described exists in practically 95 per cent. of all conditions of the stomach, either as an uncomplicated disease or associated with other manifestations. These conditions are treated with stomach rest and massage; a modification of diet is advised in conditions of Acute Gastritis. The use of the abdominal belt or support is farcical and beyond what ad-

ditional pressure and jar it might afford locally to the stomach is of absolutely no value. In these conditions the massage must be practiced vigorously and frequently. In order to secure proper rest in the stomach, it is highly advisable under these conditions, just before retiring at night, to wash the stomach out thoroughly with a bland alkaline solution, preferably four tablets of the alkaline antiseptics in four quarts of water.

GASTROPTOSIS

Keeping in mind the inhibitory action to muscular contraction of the stomach, and the adjacent esophagus, as well as the fact that the muscualr coats of the stomach and the esophagus have no bony attachment but are dependent upon their fellow muscular fibers for purchase, it can be readily recognized that the repeated and prolonged inhibitory action must necessarily result in stretching of longitudinal fibers with the outcome that the stomach becomes displaced downward. It is not very rare that cases have been reported where the stomach was found, upon autopsy and the X-ray examination, within the pelvic canal. I, myself, have seen many cases where the greater curvature of the stomach was at the brim of the pelvis, a displacement of approaching twelve to fourteen inches. In aggravated conditions of Gastroptosis there is always more or less twisting of the stomach on its long axis. Consequently, the hour-glass stomach

or the double stomach is not very infrequent. With the carrying down of the stomach we have naturally a sagging down of the Transverse Colon, and progressively a general downward displacement of the Alimentary Canal. These are conditions which physicians term Splanchnoptosis and the condition which is usually found in digestive diseases of long standing.

When one recognizes the cause, that is, the inhibitory action of the Vagus Nerve, he can readily recognize the almost insignificant value of an abdominal truss or belt in these conditions. In ten years, I have not prescribed an abdominal belt or supporting bands. Again, the practice of having the patient recline in bed with the foot of the bed elevated is practically of no value. *This condition calls for abdominal massage, thorough, vigorous and persistent*; for fairly nourishing meals of bland character given at infrequent intervals. Occasionally, the prolonged inhibitory action of the Vagus Nerve results in marked atony (debility) to motor-stimulating nerves within the muscular walls of the canal. These are the cases that obtain benefit from electrical stimulation.

Much discussion has been given, by the Medical Profession, as to the relative value of the various forms of electrical current. The Galvanic has its supporters; the same is true of the Faradic; the High Frequency and various modifications of these currents. However, it must be borne in mind that

the very electrical stimulation capable of inciting ing the motor-stimulating nerves within the wall of the digestive tract, is also capable of stimulating the Vagus or motor-inhibitory nerves and because of this fact, it is very essential that complete contraction thru massage be afforded before any electrical current is used upon the digestive tract. Massage has not the same action on the inhibitory nerves of the digestive tract as the electrical current has, in fact we have practically no stimulation of the inhibitory nerve unless the outside pressure be of almost violent character. This fact is of the greatest importance, as in producing relaxation of the pylorus by stimulating the inhibitory nerve the *powerful pressure of the electrical vibrator is necessary* in a large percentage of the cases, as even powerful pressure from the thumbs is frequently not sufficient to produce necessary relaxation about the pylorus.

These are the cases that require prolonged treatment. The patient should learn the art of washing the stomach out thoroughly upon retiring at night, and some member of his family should practice the art of vigorous abdominal massage, in order to promote complete contraction. The diet in these cases should be guided somewhat by the toleration of the patient. The distress is usually so great that restrictions in the diet need not be encouraged, because the apprehension of the patient necessarily causes him or her to avoid many

foods. The general principles of diet, as set forth in the discussion of Acute Gastritis, and reference to the general mixed diet list that will supplement this chapter, will be sufficient guide on the question of food.

Unfortunately, the debility caused by this disease retards Nature in throwing off other infections and a very large percentage of these cases are complicated by other infections. In a series of three hundred cases that I observed showed that ever 30 per cent. were complicated by Chronic Malaria, which in itself added to the debility. In all these cases I urged the patient to investigate and try to recall, if at any time, even years back, that he was in any way infected by Malaria. It is needless to add that with derangement in the muscular activity, and in the mechanical structure and position of the stomach and intestines, inflammatory conditions are always present. After washing the stomach out thoroughly, and restoring the organs to their normal positions by massage, supplemental use of the Cold Wet Pack, over the abdomen and chest upon retiring, is decidely beneficial in that it relieves the congested conditions thruout the canal by drawing the blood to the surface. The various fatty and tissue attachments of the different parts of the Alimentary Canal are practically indissectible. In other words, they are merely modifications of the normal tissues which become attached to various organs and bony struc-

ture and in turn are attached to the Canal, and with the contraction of the longitudinal fibers the stomach and intestines are contracted into their normal position by the tension put upon these attachments or ligaments thru the shortened calibre of the Canal.

Constipation in these cases is usual. The downward pressure of the colon increases the natural kink in the Sigmoid Flexure, sometimes rendering it almost impossible for the mass to pass. Occasionally, the irritation and inflammation will be so pronounced within the Canal that we have an excessive amount of mucus with the accompanying Diarrhea. Diarrhea in these conditions merely indicates the increased severity or possibly the complication of Colitis. The High Colon Irrigation, before retiring, should be practiced in these cases with the same regularity that is the *stomach massage and lavage.* As I have described in a previous chapter, mechanically, the weight of the water in the Knee-Chest position greatly aids in throwing the colon back in its normal position as well as relieving the pressure downward in the pelvic canal. This condition affords straightening out of the kink in the Sigmoid Flexure and in this way affords freer passage of the mass. The treatment should be frequently continued over months, and as an improvement in health is noted, exercise in the open air should be encouraged. However, it is strongly advisable that strenuous work, such

as lifting, sweeping and opening tight windows, etc., should only be undertaken with marked caution.

CHRONIC GASTRITIS

We cannot attempt in a Work of this volume to enter into hairline deviation of the various stages of this disease. The Medical Textbooks theorize as to the various forms of chronic inflammation of the stomach. From a therapeutic standpoint these deviations in form of Gastric Catarrh are of little or no consequence, because of the fact that Nature has provided a reserve or duplicate form of digestion which supplements gastric digestion. In other words, the burden of digesting the food is taken up in the smaller intestine just where the stomach digestion leaves off, and consequently, even in advanced conditions of Atrophic (dry) Catarrh, Nature under proper conditions will readily offset the lack of glandular supply of the digestive fluids. In fact it is a great question in my mind, especially in actual ulcerated conditions, whether or not this Atrophic form of Catarrh actually exists. The absence of mucus in the lavage in no way indicates the Atrophic condition. However, mucus detached from the walls of the stomach is capable of being digested and it is very common, in conditions of excessive flow of the gastric juices, to find the lavage clear. During my early student years, it was discouraging to me to

find, as improvements in the patient occurred, fairly liberal quantities of mucus and membranes appearing in the lavage. Experience has taught me that this is the usual result with the diminution of the flow of the Pepsin and Hydrochloric Acid. Unfortunately, the absense of mucus is too apt to impress the diagnostitian that Gastric-Catarrh in reality does not exist. The quantitative presence of Hydrochloric Acid is given by far too important a role in the curing of this disease, by most physicians. Hydrochloric Acid depending not entirely upon the condition of the gastric glands, but rather almost entirely upon the presence of food in the stomach and in conditions of dilatation or Ptosis the food is necessarily delayed in the stomach and more opportunity is thus afforded for excessive acid to appear. Frequently, with the return of the stomach to its normal contraction all manifestations of excessive acidity will disappear and it is not uncommon to find just the opposite effect, that is the lessened quantity of Hydrochloric Acid that is usually considered as the standard. There is no remedy that directly affects the mucous membrane of the stomach so effectively as that of the *Osmotic action of Water.* In other words, after the stomach has been cleansed of all its active contents by means of the stomach tube and fully contracted to its normal size and position, water should be drunk at frequent intervals, when the stomach is empty, to relive the congest-

ion in inflammatory changes, thru the Osmotic action. On beginning the treatment it not infrequently is found that the constant ingesting of cold water has a temporarily nauseating effect. The inflamed mucus membranes are perhaps excessively sensitive. This frequently accounts for the distress people sometimes experience in drinking cold water. This is one of the defects that the patient must strive to overcome and persist in the use of cold water. As improvement progresses, the patient will find that the morning indulgence in the drinking of water for the Osmotic action, will be sufficient. In fact this method should be carried out for months and even years, *more especially in the advanced years of life.*

The method I employ is, that immediately upon waking, the patient should drink a pint of water that has been placed the night before at the bedside, flex the knees and either the patient or some member of his family, vigorously massage the abdomen for at least five minutes or until the gurgling is heard as the water passes out of the stomach into the intestine. *No food should be taken into the stomach for at least one hour after the water is drunk.* Catarrhal conditions of the stomach are in reality no other than complications of the disturbance of motility. The High Colon Irrigation upon retiring, even tho the patient suffer from Diarrhea, is advisable during early stages of the treatment. It is my uniform rule to advise rend-

ering the irrigation bland to the bowel by the use of an alkaline antiseptic as I have previously described.

Needless to add, fresh air and moderate exercise, avoidance of worry, have a decidely beneficial action in these cases.

Reflexly, we frequently have conditions simulating actual Catarrh of the stomach. The reflex irritation of a sensitive Prostate or degenerative changes at the Menopause excite congested conditions in the Alimentary Canal which simulate Chronic Catarrh of the stomach. The use of the High Colon Irrigation will modify these conditions to such an extent that, as a rule, all manifestations will practically disappear. If, however, these conditions persist it is urgent that the use of the High Colon Irrigation be maintained for a much longer period.

GASTRIC ULCER

The structure of the stomach is crowded with a network of large veins. In fact the general appearance of the stomach, when contracted, looks like a fine mesh-work of blood vessels. With these large quantities of blood vessels of all sizes and varieties, with the stomach never constant in size, position or shape, with pressure never constant on these blood vessels, and rapid vibratory movements and fairly rapid contracting movements present thru digestion, it can be readily seen that it is

quite possible that some defect occur in the circulation, or that some minute part of the stomach be cut off from its blood supply. In fact it is my opinion that superficial local ulceration of the stomach is far more frequent than is generally recognized. The tender spot locally in the stomach, that lasts for several days or weeks and then disappears is suspicious of such a condition. Apart from Necrosis (death) brought about by some defect in the supply of blood to a part, Chronic Ulcers, except in malignant conditions or the result of a local Trauma (blow) are extremely rare. The tendency of all Catarrhal conditions of the Mucus Membrane is to become, first hyperplastic (thickened) and subsequently toughened and hardened so that the natural trend is against ulceration, and when we consider Ulcers of the stomach and intestine we can consider them largely as the result of local defective blood supply, rather than the outcome of progressive stages of stomach Catarrh.

The frequency of ulcers of the stomach, from my experience, and this experience will cove a great many thousands of cases that I have had opportunity to examine thoroughly, is rare. About one case in a thousand will be suspicious of ulcer of the stomach. This statement is in marked contrast with the prevalence of the diagnosis made by the X-Ray experts and the various surgeons. In fact it is a very frequent occurrence for me to have an X-Ray plate that shows nothing other than a thick-

ened pylorus, due to the spastic condition resulting from a displaced stomach, diagnosed as Gastric Ulcer. Analysis of the stool in practically all of these cases negates these finds. Neither pus nor fat being found, and the clinical outcome upon return of the stomach to its normal position further negates the presence of ulcer. The most common location of Gastric Ulcer is in the origin of the pylorus. These, however, are far more rare than is generally recognized. In thirty years of practice, I have seen but four cases where I had diagnostic evidence of Ulcer of the Duodenum. The grave outcome of ulcer of the stomach is emaciation, because of the hemorrhage, and actual depletion of diet due to the patient's apprenhension to take food; and the constant pain, lack of repose and sleep. In contrast with the general conception of Pyloric, Gastric or Duodenum Ulcers, I have always considered these conditions very benign and simple in their severity. Primarily, it must be kept in mind that, if given opportunity, Ulcers of the Stomach, Pyloric, and Duodenum, cure themselves by limitation, that is, when the parts that have been denied their blood supply have sloughed away, the healthy tissue will be surrounding, and this healthy tissue will rapidly promote the formation of scar. However, infrequently, as in Fissure (small ulcer) of the Rectum, the contracting and relaxing power constantly breaks open the scar formation, retarding the healing and

frequently makes the ulcer organic in character. As in Fissure of the Rectum the treatment must be directed towards securing rest to enable Nature to promote cure, so must the condition be afforded in the stomach. In conditions of Ulcer of the Stomach located in the body of the stomach this is very readily obtained. The mere complete contraction of the stomach to its fullest extent and the absence of food affords proper relaxation. This supplemented by the Osmotic Action of Water keeps down the local congestion or inflammation and in these cases a cure is usually very prompt. Not infrequently in these cases will the parts entirely slough out and scar tissues be formed within a week. However, when the Ulcer occurs in the Pylorus where the circulating fibers predominate, the defects are greater. With the complete relaxation of the muscular coats obtained when the stomach is contracted fully beyond the fifth and seventh ribs, there is a marked relaxation of the pylorus. Active stimulation of the Vagus Nerve therefore will promote relaxation, evacuation of the Gall-Bladder, in my hands, has greatly added to the relaxed condition in and about the pyloric opening. In fact, I make it a uniform rule to evacuate the Gall-Bladder. This has further salutary effect in that the bile is moderately antiseptic and by neutralizing the acid content soothes the part. The Bile being strongly alkaline neutralizes the Hydrochloric Acid in the stomach. Thus it

can be seen that in promoting recovery from Gastric or Pyloric Ulcer we must concentrate upon promoting relaxation of the muscular coats of the stomach. The use of the stomach tube in these conditions is to be encouraged. In spite of the fact that not infrequently they are accompanied by marked Hemorrhage, the washing of the stomach with a moderately Bland Alkaline solution soothes the stomach content and promotes relaxation, and upon the first evidences of distress repeated stomach lavage is indicated.

It must be kept in mind that the purpose of our treatment is to promote as rapid a cure as possible with no after effects. With active motion and a failure to form proper scar tissue, the surrounding tissue becomes thickened and indurated (hardened) and in people of advanced years this thickened, hardened, tissue is apt to become progressive, which in reality is Cancer. It is my conviction that fully fifty per cent. of Cancers of the Stomach owe their origin to a neglected Stomach Ulcer, where the stomach has been afforded opportunity to exercise excessive contracting motion.

Diet in Gastric Ulcer will depend much upon the ability of the patient to obtain rest after the meal has been digested. Where the patient is in a fairly well-nourished condition, and this is usual in Acute Gastric Ulcers, the first seventy-two hours should be spent quietly, preferably in bed, after the stomach has been completely contracted and cleansed

by a bland antiseptic lavage, and the patient directed to drink a glass of water hourly, preferably Distilled Water because of its Osmotic power. Additional draining of the congestion will be afforded by the use of the Local Cold Wet Pack over the chest and abdomen, changed every two hours. After the seventy-two hours it is usual for the processes of repair to have advanced sufficient to warrant an ingestion of a meal. In these conditions the mixed diet, with the restrictions that I have set forth, will be most bland, that is, variety of food renders the meal more bland than any single food. After the meal has opportunity to digest and pass into the intestines, that is about two hours after eating, the stomach should be washed out thoroughly with a bland alkaline solution, and should be massaged. The duration of an Acute Gastric Ulcer will rarely exceed a week under the treatment of Osmosis.

Chronic Gastric Catarrh

In these conditions the patient is usually emaciated, racked with pain and apprehensive of eating. In these cases the treatment will not permit of starvation. The stomach should be thoroughly contracted, the content rendered bland by means of lavage, the Gall-Bladder emptied, Local Cold Wet Pack applied, and once a day a fairly hearty meal of mixed foods should be indulged in. Three hours after eating the stomach should be washed

out thoroughly. In these cases, however, effort must be made to promote the recuperative powers of the patient. Fresh air and sunshine, well-boiled foods, in fairly liberal quantities should be given for the daily meal. Keeping in mind the great object being to check the inflammation about the ulcer before the processes of Hyperplasia become so great that they are characterized as Cancer; in these cases it is not a question of cure, but it is a question to cure quickly before the almost inevitable arises.

Gastric Cancer

Just to the extent that we can check the formation of Hyperplasia by Osmotic Action of Water are we able to prevent the formation of Cancer in the stomach. It is a grave question in my mind to what extent this Osmosis will check in the early stages of formation of Cancer in the stomach. Theoretically, if persisted in for weeks at a time the lack of cellular activity, which accompanies excessive blood supply, whether it be venous or arterial, is decidedly salutary in checking the formation of Cancerous Tissue. It should be explained here, that Cancerous Tissue is not a tissue that is abnormal in the Human Economy, but rather is an excessive growth of a Normal Tissue which because of the rapidity of the growth becomes malignant. Various diagnostic measures have been advanced as to the recognition of the early

states of Cancer of the stomach with the formation of scar tissue and Hyperlastic growth, the glandular element is destroyed, and consequently less Hydrochloric Acid is found in the stomach. The inhibitive amount of Hydrochloric Acid being marked, promotes the formation of Lactic Acid, which otherwise would be prevented in the presence of abundant Hydrochloric Acid.

However, the progressive loss of weight and the absence of desire for food are the cardinal systoms of Gastric Ulcers, and these frequently manifest themselves long before any Tumor may be discovered. The merits of operative procedure are questionable. In all cases where Cancer of the stomach is suspected, in its early stages, it is my conviction that the opportunity of recovery is better secured by thorough rest of the organ in a fully contracted position, and thorough Osmotic Action promoted, than by means of operative procedure; for the shock of an operation further depletes the patient and opens fresh avenues for growth of the Cancerous Tissue.

In substance, the best treatment for Gastric Cancer is Prophylactic, in promoting the quick recovery from Gastric Ulcer.

Diet List to Supplement This Chapter

DIET LIST

(*"This Diet List has been carefully selected and must be STRICTLY followed."*)

Meats

All boiled meets (beef, corned beef, mutton or lamb, and ham; chicken or other fowls; tripe or venison).

Roast beef, roast mutton or lamb, roast chicken, turkey, squabs or reed birds (should not eat roast pork or veal.)

Tender broiled steak or lamb chops (without pepper, onions, or sharp seasoning).

Fish

All boiled or baked fish may be eaten; avoid shell fish (crabs, lobsters, oysters, clams and mussels.)

Fried Meats and Fried Fish of all Varieties Must Be Avoided

Vegetables

All boiled or baked vegetables may be eaten (except onions, garlic, tomatoes, radishes, horse-radishes, cabbage, sour-kraut, cauliflower, cucumbers, corn, and preserved or stuffed olives).

May eat raw celery, lettuce, or water cresses.

Fruits

All cooked fruits may be eaten (except raisins, currents, figs, or dates and prunes).

Raw fruits should be slowly eaten and thoroughly masticated. Sugar assists in their digestion, and bananas should be well dusted with sugar before eaten. (Should not eat pineapples, peaches, apricots or strawberries).

Dairy Products

Certified or Pasteurized milk should be boiled before used, and drunk only when warm. Eggs must be fresh and soft-boiled or poached. Do not eat hard-boiled or fried eggs. Unfermented cheese may be eaten (pot-cheese, Neuchatel). Do not eat sharp or odorous cheese. Diluted condensed milk, sugared or unsweetened may be drunk. Mellin's Food, malted milk, Nestles' Food, are highly indorsed. Matzoon, Zoolac, Bacalac or other fermented milks should not be used unless especially directed by the physician. Fresh milk not chemically treated, may be drunk. Sweet butter and untainted salted butter, and oleomargarine may be freely eaten.

Bread

Bread should be thoroughly masticated and eaten in moderation (wheat bread produces fat). Avoid sour breads. Dry breads absorb saliva more readily and are easiest to digest.

Rolls, biscuits and home-made and not highly seasoned cake may be eaten. Home-made pies in moderation, except cranberry and mince pies. Avoid pastry or tarts or dessert with crusts containing lard. Avoid bran-breads.

Cereals

Must be thoroughly cooked; (avoid H. O. Quaker Oats, or fermented cereals.) Plain or Irish

oatmeal, boiled rice, farina, (no Cream of Wheat), wheatena, hominy and corn-meal in moderation. Corn starch is easily digested.

Beverages

Phillips' Digestible Cocoa is indorsed, chocolate, cocoa, freshly made tea without milk, hot milk, light beers, mineral waters are permitted. Should not Drink Coffee, wines ales or liquors.

Desserts

Ice cream and the iced juices of fruits may be eaten. Cornstarch, junket, custard and preserved fruits when sugared and not otherwise preserved. Do not Eat Nuts nor the Pits or Seeds of Fruits.

NOTE—Water drunk on empty stomach promotes evacuation of the bowel and lessens congestive and fermentative changes. DRINK COOL WATER FREELY ON RETIRING AND RISING.

NOTE—Water may be freely drunk before a meal, but should not be used to wash food from the mouth into the stomach during a meal as this prevents the saliva from being properly mixed with the food, and checks the digestion of the starches.

NOTE—Sharp gravies and pepper and spices, onions and garlic juice must not be used in season-

ing the meat or fish. Lemon juice, olive oil and celery may be used.

SHOULD NOT EAT PRESERVED OR SPICED MEATS OR FISH.

NOTE—Gentle massage over the stomach after a meal assists digestion; slapping and rotary pressure are sufficient.

CHAPTER XVII

Diseases of The Intestines

The frequency of complications of the Intestines with conditions of the stomach is probably less than one in twenty, yet because of the failure to relieve the latter by the usual means of alkalies and laxatives, there is a broadcast general belief that Intestinal Diseases are common. Such is not the fact. For instance, in approximately 50,000 cases that I have had opportunity to make physical examination of I have been able to find but two cases of Duodenal Ulcer, and it is extremely rare that the autopsy will reveal any pathological condition in the membranes of the the larger or of the smaller bowel. The bowel in itself is not only an astringent, but has an efficient disinfectant action, and consequently it is extremely rare that any pathological condition exists, either in the small or large intestine where there is a slightly normal flow of bile into these organs. However, occasionally, we have a Catarrhal Condition in one or all of the parts of the small intestine. This condition, however, is never primary and is always complicated and dependent upon some lesion of the liver or the stomach. It is a matter of first importance, therefore, that in all conditions affecting the small

intestine the Gall-Bladder be promptly emptied in order to obtain the astringent and disinfectant action of the liver.

Massage of the Gall-Bladder requires much less skill than is usually considered. The contents of the abdomen are semi-fluid and consequently any pressure on the abdominal walls is directed more or less upon the Gall-Bladder. The massage should begin on the lower portion of the abdominal wall, pressing upward and from side to side making the pressure as deep as possible with the flat of the hand, forcing the Gut and Omentum against the lower border of the liver where the Gall-Bladder is located. The hands should be gradually forced upward until they are practically below the ribs and a little to the right of the median line and with one hand pressing upward, the other should rotate locally over the Gall-Bladder. It is possible, in the vast majority of cases, for the individual in this manner to evacuate the Gall-Bladder. However, in a small proportion of cases it is advisable that this be done by a physician or some member of the family.

Gall-Stones

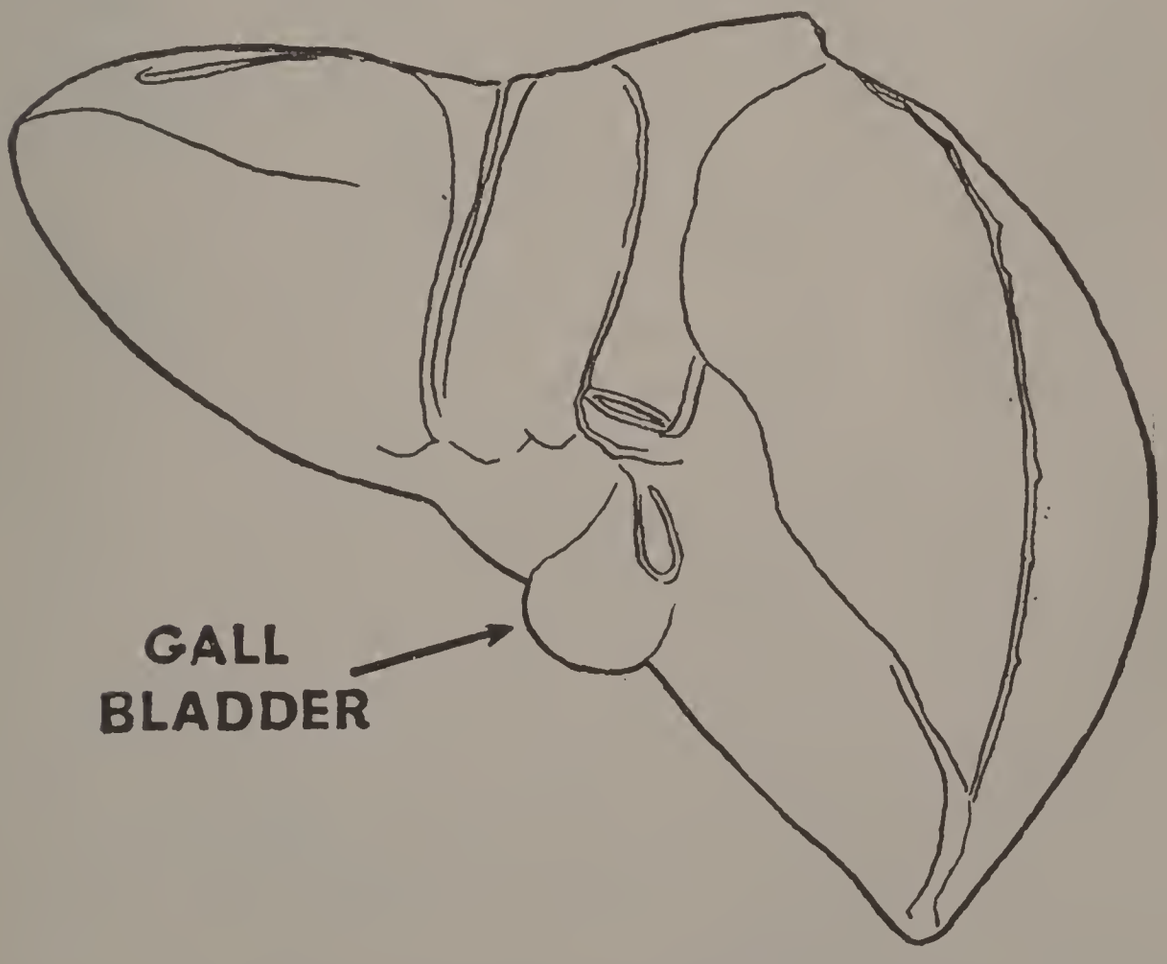
It is surprising with what ease a certain number of Gall-Stones are expelled from the Gall-Bladder thru the Gall-Duct into the intestine. However, in a certain proportion of cases these gall-stones find their way into the intestine with no other

pressure or force than a slight contraction of the muscular fibers of the Gall-Bladder. When one considers that Nature is able to expel the child thru the small opening of the Cervix of the Uterus, it is not to be wondered, that the same dilatation is afforded the thin walls of the Gall-Duct.

Gall-Stones are a very common condition. Fully five per cent. of the people after maturity have Calculi in the Gall-Bladder. However, these as a rule afford no discomfort and it is only when they enter the Gall-Duct that we have Biliary Colic. A Stone that can enter the Gall-Duct with the slight force that is capable of being exercised by the thin muscles of the Gall-Bladder, can be further propelled thru the Gall-Duct by the additional pressure from massage of the Gall-Bladder. It must be kept in mind that with the modification of the Gall-Duct by the obstruction of the Stone in the Duct, there is within the Gall-Bladder, and behind the Stone a certain amount of fluid bile which upon pressure has a wedge-like effect, similar to the bag of water in the Uterus, which serves to dilate the Gall-Duct and afford the Stone passage into the intestine.

In a large percentage of cases, contraction of the stomach affords sufficient relaxation of the Pyloric muscles about the outer opening of the Duct to promote the passage of bile into the intestine.

Most physiologists contend that the passage of bile into the intestine is merely accompanied by the entrance of food from the stomach. However, the food cannot enter the intestine from the stomach until the Pyloric muscles at the end of the stomach become relaxed, and with contraction of the stomach we have a relaxed condition of the Pylorus, and consequently opportunity is afforded the bile for a fairly continuous flow into the intestine. Therefore, every effort should be made, in conditions of impacted Gall-Bladder, or Gall-Stones, to maintain the stomach in a fully contract-



THE LIVER VIEWED FROM BEHIND
Showing position of Gall-Bladder

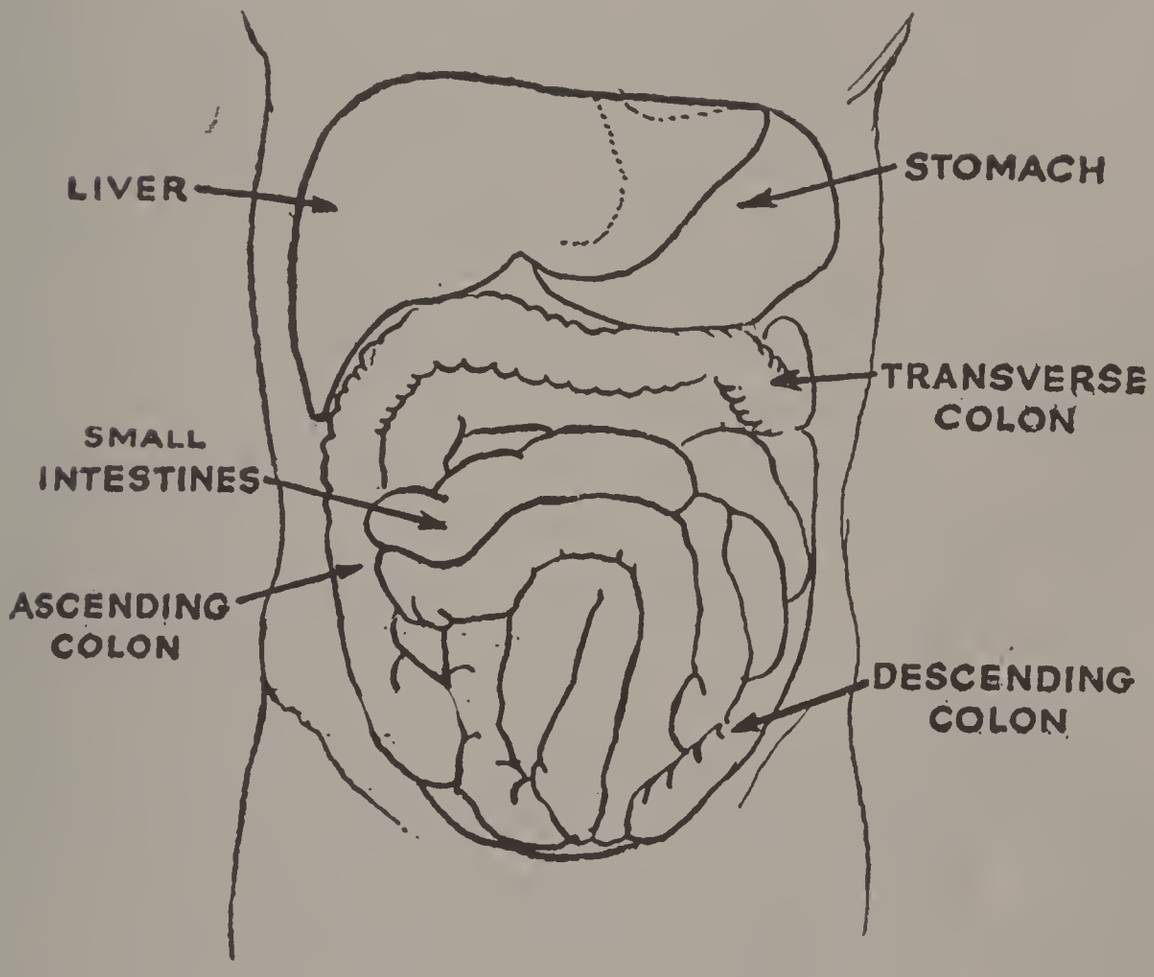
ed condition. Again, it must be borne in mind that with the distended condition of the Gall-Bladder the muscles of this organ are weakened and do not as readily expel the bile as they would otherwise. Consequently, massage of the Gall-Bladder and the Stomach should be maintained for several weeks at frequent intervals, following the expulsion of Stones or Biliary Gravel.

Keeping in mind the fact that the presence of water increases the fluidity of all secretions, Water should be drunk freely in bulk when the stomach is empty. In these cases, the custom of drinking two glasses of cold water, preferably Distilled Water, one hour before meals, has a decidedly beneficial effect. The High Colon Irrigation reflexly stimulates evacuation of the bowel, and should always Antedate any attempt to massage the Gall-Bladder. I frequently find the Spastic condition in and about the Pylorus decidedly relaxed after a High Colon Irrigation, in contrast with the irritation antedating the Colon Lavage.

It must be borne in mind that Hydraulic pressure is always exerted in the direction of least resistance. The muscular coats of the Gall-Bladder are much stronger than those of the Duct and consequently the Duct becomes quite readily obliterated under pressure, similar to the Cervix in the Uterus at childbirth.

Unfortunately, malignant growth in and about the liver and the Gall-Bladder very often simu-

lates Gall- Stones and where we fail to expel the Stone after repeated manipulations, or fail to empty the Gall-Bladder of its bile or Biliary Gravel, we must be alert to the possibilities of Cancerous Growth in and about this section.



The Abdominal Cavity

In Jaundice conditions, either from stasis within the liver or from inflammatory changes in and about the Gall-Duct and Gall-Bladder, manipulation of the liver and the Gall-Bladder is sometimes painful. The pain should be the guide for the

amount of pressure exerted but we must discriminate between real pain and apprehension. Unless the Jaundice Condition be due to Malignant Growths in and about the Gall-Bladder, Jaundice will rapidily disappear, after four or five days, with complete and repeated evacuation of the Gall-Bladder.

The diet in these cases should be of such a nature as to increase the fluidity of the bile. Eggs should be avoided and cooked fruits encouraged. The *citrus fruits, that is the orange, lemon and grape-fruit have a mild Cholagogue Action on the Liver and should be taken freely either in the form of beverages or as compotes.*

As a very general rule, expulsion of the Gall-Stone into the intestines is accompanied by a "popping sound" followed by a gurgling of the discharge of the bile, and during massage we should be alert to observe these evidences. Not infrequently we can detect a lessening in the size of the Gall-Bladder under massage and usually great relief is experienced immediately as the Stone or Bile leaves the Duct. When once the Stone reaches the intestine it is benign and is readily expelled with the stool. Failure to detect the Stone in the stool is not satisfactory evidence that it has been removed. The process of observing the stool is tedious and is a somewhat difficult matter, but with the subsiding of all manifestations in and about the abdomen, we can rely upon the Stone being ex-

pelled into the intestine. To relieve inflammatory changes in and about the liver from a condition of Gall Stone attack or Jaundice, the use of the Local Cold Wet Pack is indicated and the High Colon Irrigation should be practiced twice daily, which in addition to reflexly promoting relaxation in and about the Pylorus and Gall-Bladder with increased discharge of bile, has the additional benefit of reducing inflammatory conditions because of the Osmotic Action of the Water in the intestines.

Appendicitis

Certain diseases are associated with the Digestive Tract and prominent among them is the so-called Appendicitis. When I approach this subject I recall the so-called prevalence of this disease, but I have had opportunity to examine with thoroughness approaching 60,000 cases of abdominal diseases, and have never been able to satisfy myself that this obsolete organ can physiologically or anatomically of itself become inflamed. *Primarily this useless piece of gut is not functional in the human frame.* Frequently in early life it is almost insignificant in size, and sometimes it is as long as eight or nine inches. The average length, however, is four inches. It is attached in part to the Caecum, which can be located on the chart on page ninety.

Practically every pain of the Digestive Tract has been attributed to Appendicitis. The so-called Mc-

Burney's Point that is midway between the prominence of the Pelvis and the Navel, and which is considered the main diagnostic symptom of Appendicitis, is *four inches away from the actual location of the Appendix,* and is in reality usually the location of the Duodenum, which is more than fifteen feet along the digestive canal, away from the Appendix.

Keeping in mind the fact that the only thing the Appendix does within the human body *is to shrivel up and decay,* any question of attributing this inflammation to the result of functional derangement cannot be considered. Again, the fact that the circulation of the Appendix is much less than that of the surrounding tissues, to wit, the Caecum, *the proneness of the Appendix to inflammation is much less than is this latter organ.*

On the autopsy table, occasionally, we will find the *Appendix entirely obliterated, and yet during life the patient has experienced no distress in and about this location.* Again, in old people we find the Appendix has remained its normal size. I have never been able to detect any scar tissue in the Appendix nor have I found any records in any Medical Works or attendant fields, where any Cicatrix has been found in the Appendix. Appendicitis while extremely rare *is secondary* to local complications. One case I saw was of Tubercular Origin with general Tubercular Involvement of the Caecum. Another case of possible involve-

ment of the Appendix was due to the suppurative generation of the Dermoid Cyst that was attached to the right Ovary, the Caecum, and to the Appendix.

The symtoms attributed to Appendicitis in over ninety-five per cent. of my cases, were nothing other than Pyloric Spasm of the Duodenum. Unfortunately this condition of Spasm, as I have described, is frequently accompanied by other infections. The rapidity with which the stomach is affected by an acute attack of Malaria renders this menace of operative procedure in these cases extremely grave. It must be borne in mind that Malaria is primarily a disease of the blood, in which the oxygen carrying power of the blood is gravely lessened, and the further depletion of the oxygen by means of an Anaesthetic, and the shock attending the operation not infrequently results in death.

The presence of Malaria is not recognized by the Laity or the Physician. However, if the operation is insisted upon and it is decided that the operation shall be performed, it is highly imperative that a Local Anaesthetic shall be used to avoid the grave shock and depletion that accompany the use of Ether, Chloroform, or Nitrous Ether, where the patient has either Acute or Chronic Malarial Manifestations.

I have had the opportunity at the hospital, to examine fully one thousand cases that had been

sent in for operative procedure, and in every case I found no symptom that would warrant my arriving at the conclusion, that the patient had Appendicitis. In private practice and in the hospital I have examined fully twice this number of cases, that had been operated upon for Appendicitis, where the symptoms returned and were identical after three or four months, and they proved to be nothing other than Spasm in and about the Pylorus. There is no doubt that the prolonged rest to the stomach necessary in these cases, accompanied by a thorough evacuation of the bowel content. not infrequently affords temporary relief, but I have never seen a case where sooner or later the symptoms did not manifest themselves identically with those antedating the operation; unless it has been a case of Secondary Appendicitis where the primary cause has been removed.

In order to emphasize certain classes of cases that are attributed to Appendicitis, I would cite several recent experiences.

(1) Mr. A. G. Athlete, experienced pain in the side after a scrimmage. X-ray examination, described as follows, "Thickening in and about the Appendix." Symptoms were, pain about the so-called McBurney's Point with occasional vomiting; general condition of lassitude. Operation considered imperative. Arrangements made at the hospital to have the Appendix removed. My examination revealed the lad to have a Gastroptosis with

Spasm at the Pylorus radiating down to the Duodenum. *Under massage all symptoms disappeared,* the stomach returned to its normal place and the patient discharged as cured.

(2) Mr. J. D. taken sick with profound chill, vomiting and general abdominal distress; tenderness at McBurney's Point. Consultation of three physicians; operation immediate. Examination of blood showed the patient to be suffering with nothing other than Acute Tertian Malaria. Under the use of Quinine and a Sweat he completely recovered.

(3) Mr. T. G. a young lad of tender years, taken sick in the middle of the night with cramps, colic, headache and nausea. Family physician called in two surgeons, *and operation for Appendicitis was performed in the emergency. The case considered hopeless.* The next night the lad broke out in the rash of Measles and made a complete recovery. (There was an epidemic of Measles in this section, and no examination had been made to reveal the presence of this disease.)

(4) Mrs. A. R. was taken sick with grave distention in and about the stomach and intestine, with pain radiating down the left side. Her Appendix was removed and she remained in the hospital for four months. She was informed that a second operation was necessary to remove the stump of the Appendix. Examination revealed a Dilated

Stomach, and under treatment she made a rapid recovery.

It must be kept in mind that operations for removing the Appendix, primarily consists in tying off the Appendix before it is amputated, and the ligation itself necessarily produces the Venous Congestion, so that the term "Congestive Appendicitis" *should be looked upon with marked skepticism.* Again, the so-called statement of the Ruptured Appendix should be regarded as not being anything exceptional as the very function of the Appendix is to shrivel up and if part of the Appendix has been ruptured, it is only logical to conclude, that this is the result of the natural process of decay in this part.

Verifying My Claims, I Insert A Recent Publication

The "Chronic Appendix."—Whiteford, in The Practitioner, reaches the following conclusions:

1. The enormous number of patients whose abdominal ailments are now diagnosed as Chronic Appendicitis chiefly consist of cases with symtoms of widely-varying causation and for which symptoms the Appendix is not responsible.

2. The symptoms attributed to the Chronic Appendix are not explained by the pathological findings, and are not cured by removal of the Appendix.

3. The operation for removal of the Chronic Appendix not only fails to cure, but frequently makes the patient worse.

4. Attribution to the Appendix of abdominal discomforts of obscure origin hinders investigation into the causes of abdominal pain.

5. In the surgeon, the Chronic Appendix theory produces laxity in diagnosis and, in operating, incisions so small that thorough examination of the abdominal contents is made a mechanical impossibility.

6. In the layman, the operation for removal of the Chronic Appendix, because of its failure to cure and because of its after-effects, is producing doubt about the necessity for operation in acute appendicitis and mistrust in the bona fides of the surgeon.

7. The Chronic Appendix theory, judged by the test of the ability of the operation for removal of the Appendix to rid the patient of his symptoms, is found wanting.

8. In the interests of surgeons and patients the diagnosis of Chronic inflammation of the Appendix as a condition requiring operation should be abandoned.

It is fair to conclude that at least fifty thousand operations are performed annually for this so-called lesion. During Acute Manifestations operative procedure is frequently the cause of grave complications. Involuntarily the patient swal-

lows a very considerable amount of the Anesthetic which is extremely irritating to the stomach and to the kidneys. As a consequence it aggravates any inflammatory changes which may be present. In all conservatism, I could strongly state that Primary Appendicitis is extremely rare. Also, that the tenderness in and about McBurney's Point and the vomiting are in no way significant of any disease of the Appendix, that the so-called blood content has no more significance of degenerative changes in and about the Appendix than it has in degenerative changes in the human body, and to say the least it is extremely farcical to attempt to diagnose the Appendix by means of the blood contents. Again, no operation should be performed upon this organ, and a general Anesthetic given, where any manifestations of Acute or Chronic Malaria are present. Also, that before any operation be performed the entire Alimentary Canal should be cleansed as far as possible by the Stomach Lavage and the High Colon Irrigation; the Gall-Bladder should be Evacuated and the Stomach Contracted to its fullest extent and the Pylorus obliterated. When these steps have been taken, I am confident that not one case in a thousand of the so-called Appendicitis condition, will need any further Treatment to relieve all these manifestations. There is nothing new in the allegations of the great *benefits obtained by abdominal massage*. More than thirty years ago Professor

Pepper elaborated upon the results obtained by this method, and the art of massage in the past three decades has become an almost obsolete practice. As in all inflammatory conditions in and about the Abdominal Canal the congestion and inflammatory changes are relieved by the use of the Local Cold Wet Pack. *It is advisable to repeat the application every two hours.* The diet in these cases should receive special attention. With the Spastic conditions in and about the Pylorus the Hydrochloric Acid will usually be found in excess. Not infrequently Butyric Acid will be found also present. Well-boiled cereals and well-boiled fruits in the nature of compotes should constitute the bulk, taking care to avoid fermented cereals. Sugars should be encouraged as the presence of sugar always promotes the conversion of starches more rapidly than otherwise into their sugars. (The end product of a ferment stimulates its fermentation.)

Secondary Appendicitis is occasionally the result of Pyo-Salpingitis, that is pus in and about the Fallopian Tube. Where the inflammatory changes throw out an exudate into the Pelvic Canal, occasionally there will be some adhesions formed that may involve the Appendix. I personally have never seen such a case, altho theoretically it might occur, and in this event with removal of the diseased Ovary or Tube the cutting away of the affected portion of the Appendix is

justified. However, these are extreme cases where the poison calls for radical removal.

Rectal Fistula

The cause of Rectal Fistula is, not infrequently, and some surgeons go so far as to say that they are always, Tubercular in origin. My own personal experience would cause me to believe that they were justified in this claim. It must be kept in mind that the depleting effect of an actively discharging Fistula requires prompt measures to effect a cure. Therefore in operative measures we should always supplement the operation by Hygenic measures to improve the general condition of the patient. Occasionally, the persistent use of the High Colon Irrigation supplemented by the general mixed diet, in which bananas play a very important role, has met with complete recovery. As a fairly general rule, these are cases that should be operated upon because of the presence of the Tubercular Bacilli in the pus. It should be borne in mind that the Fistula is nothing other than a circumstantial manifestation of the local condition, and mere obliteration of the canal in itself not infrequently results in a return of the condition.

Sprue

This condition in reality is an infection and while its manifestations appear on the gums and

tongue, not infrequently they will be found genaerlly distributed thruout the Alimentary Canal. Because of the readiness with which this condition clears up, after disruption of the infection by means of a disinfectant, the Hydrotherapeutic Treatment of this disease is inferior to the Medicinal. These cases respond very quickly to Calomel *in minute doses.* In young infants the one-tenth of a grain of Calomel dissolved in a tablespoonful of water, placed in the infant's mouth and the mouth held closed so that the infant must swallow the same, usually secures application of the Calomel (Mercury) to the affected tongue and gums as well as generally thruout the Digestive Tract. The use of the High Colon Irrigation with the addition of a small quantity of Alkaline Antiseptic Tablets is useful in disinfecting the bowel in these cases. With the infant under two years of age the use of Calomel should be repeated in this dose every two hours. For the infant over two years of age, one-fifth of a grain of Calomel every three hours until the patient has had five or six doses which will usually prove sufficient.

Because of the readiness with which the infection will undergo cultivation in milk, it is advisable that the use of the breast or cow's milk be avoided for two or three days. Plain gruels of barley or oatmeal should be substituted for the milk.

Pyorrhea

While not attempting to enter the field of dentistry in this discussion, it would appear that a certain percentage of physicians are obsessed with the idea that practically all the evils that the human frame suffers from, owe their origin to the generation of pus in and about the roots of the teeth. A broad-minded discussion of this question is useful. There is no organ in the human body so open to infection as is the oral cavity. Dust, dirt, food, fingers and practically everything serves to introduce all forms of germs into the mouth cavity. When I was a student in Berlin, one of my colleagues was able to isolate twenty-eight differenf germs in the mouth and gums. So that, it is logical to conclude that Pyorrhea *is one of the results rather than the cause* of the many ailments which are attributed to the presence of pus in and about the roots of the teeth.

The rule of extracting all the teeth and the patient's substituting them with false teeth, *should be condemned.* There is no question but that the actual Necrotic Teeth should be removed and ample drainage afforded the cavity, but inability to masticate food as well by artificial teeth as by means of the natural teeth, is a very strong argument against their removal.

Rheumatism and Neuritis now prominently attributed to Pyorrhea are more apt to be the out-

come of *fermentive changes* in the Digestive Tract which are *largely brought about by improper mastication,* than by the mere presence of pus at the roots of the teeth.

It has been advocated that this pus is swallowed. The Pyo-genic germs (pus producing) are found in avenues in the cavity of the mouth even with practically sound teeth, and were the claims of these physicians, who attribute so many ailments to decayed teeth, based upon logical reason, Esophagitis (inflammation of the gullet) would be a constant disease, whereas it occurs so very seldom that it is considered one of the extremely rare diseases. It must be borne in mind that the Tonsils are loaded with White Corpuscles ready to pounce upon any offending bacteria as part of their prey, and *these much abused organs act as sentinels in the upper digestive tract.*

Hydrochloric acid is a powerful antiseptic. Bile in itself is a powerful antiseptic and quite rare is it that we find any Pyo-genic germs in the stomach or small intestine.

Auto-Intoxication

Auto-Intoxication is a much abused term and is frequently attributed as being the result of Pyorrhea; while pus to a certain extent may be absorbed by the blood with none of the acute symptoms of Septicemia (blood poisoning) the eliminating ability of the bowel and the kidneys can be pro-

moted to meet sufficient drainage by means of the use of the High Colon Irrigation, to meet any such possibility. Not a few conditions of Pyorrhea can be attributed to sleeping with the mouth open. Nature has provided that the oral cavity be largely a closed cavity, and the pressure of air is from within outward, in this way preventing largely the introduction of germs. However, in conditions of Adenoids, the mouth is frequently called upon to supplement the Nasal Air Passages.

The simple remedy of tying an empty spool to the middle of the patients back so that when he sleeps on his back (and the patient that opens his mouth and snores usually sleeps on his back) the pressure of the spool will be so uncomfortable that involuntarily he will roll over and sleep on his side, and thus, prevent the introduction of many germs that are capable of producing Auto-Intoxication.

While Auto-Intoxication may arise from the presence of pus in the large bowel, this is always secondary to some other lesion, and with the Vertigo Dizziness, Cardiac Palpitation and Malaise, that manifest themselves with this condition, the massage of the Gall-Bladder and the High Colon Irrigation should be persisted in, and in the vast majority of cases will be met with immediate benefit.

Peritonitis

Peritonitis is rarely a primary or Acute Disease. It is usually secondary to some pelvic infection. Simple and primary Peritonitis is extremely painful, but readily responds to Hydrotherapeutic Treatment. Occasionally, the origin of this condition is a blow on the abdomen. In fact all the cases of primary Peritonitis that I have observed were attributed to a blow. Striking the abdomen against the bedpost or the door-knob, accidents where the abdominal wall strikes some protuding article, a kick, even that of an infant in arms, has been the cause. The Local Cold Wet Pack, following the High Colon Irrigation meets with prompt results. However, in these cases food should be abstained from for twenty-four hours, as the presence of food in the Alimentary Canal promotes peristalic movement and aggravates the pain. Water, on the other hand, by increasing the Osmotic Action drains off the congested condition in the Peritoneal Sac, and *the patient should drink freely of water.* Rest in bed is very necessary. Secondary Peritonitis, usually produced by Irritant Fecal mass or Gonorrheal Infection, should receive removal of the cause, and in addition the Local Cold Wet Pack and the High Colon Irrigation. Where the infection has become general and the distention pronounced, in spite of the pain, the High Colon Irrigation should be repeated twice

daily, and the rectal tube permitted to remain within the rectum to enable the escape of the gases. In conditions of collapse the General Warm Tub Bath should be maintained, that is, the patient should be placed in a fairly warm bath covering her entire body, with the exception of the face, and this should be maintained for at least one to two hours, and in some cases much longer. The general Osmotic Action of the warm bath will rapidly drain off the congestion of the Peritoneum, and enable Nature to generate Autogens before collapse intervenes. In these cases, the poisons from the infection generate rapidly, and the patient should be given plenty of Warm Drinks accompanied by the General Hot Bath to insure proper drainage thru the Kidneys. Drainage of the affected Tubes or Uterus should be afforded. These cases should *avoid all food,* until all acute manifestations have subsided in order to afford rest to the stomach and small intestine.

Pancreatitis

This is usually a secondary condition notwithstanding the conclusions reached by a recent observation in Diabetes. Among the causes of secondary or dependent Pancreatitis is obstruction of the Common Duct. It must be borne in mind that the Duct that empties the Pancreatic Gland juices, unites with the Gall-Bladder Duct, and forms the Common Duct, which in turn enters into the small

intestine; and any obstruction in the Common Duct, such as found in Gall-Stones or inflammation of this Duct, results in a congestion and a stoppage of the flow of the Pancreatic Fluid. Pyloric Spasm will also close the opening of the Common Duct, exciting the same condition in a modified form. Pressure such as tight corsets produces inflammation of this organ. The Pancreatic Juices contain Amylopsin which has the power of converting the starches into sugars in the presence of Bile. Contention that derangement of the Pancreatic Gland is the direct cause of Diabetes does not merit logical reason. The cause in Diabetic conditions, is a defect in the conversion of Sugars into Glycogen which is fat, rather than that the Pancreatic Juices convert the starches into sugars. While it is true that the secretion of the Internal Glands, (Thyroid, etc.) promote the activity of the white corpuscles in the blood in the destruction of Glycogen yet this function can in no way be attributed to the Pancreatic Gland. However, it is possible that the Pancreatic Gland is capable in one of its elements of stimulating activity in the liver and the absence of this element in the Pancreatic Juice may result in a failure on the part of the liver, to perform the function of converting Chyle and Chyme (digested food of the stomach and intestine) into Glycogen. However, this function of converting food into Glycogen is more readily attributed to the stimulation received from the glands

of internal secretion, as well as thru the sympathetic nerve system promoting coordination of functional activity. It is a well-known fact that any disturbance of the brain matter, more especially at the base of the brain known as the Medulla, will frequently result in Diabetic manifestations.

The treatment of Pancreatitis is removal of the cause. The twice daily use of the High Colon Irrigation and Local Cold Wet Pack changed at every two hours interval. In these conditions it is highly advisable not to put an excessive strain upon the starch conversion property of the Pancreatic Juices, keeping in mind that the supply excites functional activity in the Human Economy and cooked starches should be avoided. However, raw starches are not readily attacked by the Pancreatic Juices, and reflexly encourage the flow of Bile; so that a moderate indulgence of raw fruits can be given. However, during *all acute manifestations* it is advisable to have the diet exclusively proteid in character, that is meats and eggs.

Hepatitis

Primary Hepatitis is an extremely rare condition, but it is a frequent accompaniment of infections such as Typhoid Fever, Pneumonia, Scarlet Fever and Measles, in fact all Acute Infections, to a greater or lesser degree excite derangement in these Glands. Correction of the cause is the first treatment. General abstinence of food for the first

twenty-four hours is indicated. In fact it is characteristic of this condition that food is repugnant to the patient. Anorexia, (loss of appetite) is characteristic of Typhoid, Malaria and Pneumonia due undoubtedly to the congested condition in the liver. The High Colon Irrigation thru its Osmotic Action as well as reflex stimulation of the organic activity, is the ideal treatment in these conditions, and should be practiced at intervals of every four or five hours. If the condition is complicated by inflammation of the Gall-Bladder or Gall-Duct this organ should be emptied by massage.

CHAPTER XVIII

Heart Diseases

The general conception that Diseases of the Heart are commonly fatal, is largely based upon the fact that their progress towards recovery is not one of repair to the diseased tissue, but one of accommodation where Nature supplies the substitute for the defect. In other words, *compensation must be arrived at in order to effect what is called a cure of these diseases.*

Compensation, in contrast to repair, is slow and progressive, and the grave danger in heart diseases is the failure to give Nature opportunity and time, to make this necessary accommodation or compensation. Perhaps an illustration of this might clear the situation. Take the most common of diseases of the heart, that is, the Leaking Mitral Valve. The force of the contraction of the Left Mitral excites the forcing back, more or less, of the blood into the Left Auricle, and a failure to propel the normal flow of blood into the large artery. Thus, it can be seen that the normal blood pressure being reduced in these conditions, the heart necessarily becomes more labored in its action, and a general disorder in the circulation is ultimately reached.

Normally, Nature would correct this condition;

first by the stretching of the walls of the Left Ventricle so that the volume of the blood to be expelled would be increased; secondly, it would develop an increased muscular tissue to propel the blood more efficiently from the Left Ventricle, and when the proper amount of blood-supply, and the proper amount of muscular power was reached, the health and vigor of the individual would not be interfered with. However, the Valve would not be corrected and the Leak would continue, but the tissues would receive ample nourishment and circulation, and the blood pressure would be sufficient for health.

Fundamentally, therefore *the great element in heart conditions is rest.* It can be readily understood that the heart is working under difficulties, and anything that would interfere with the functioning of the heart, would add to the labor, and compensation may either not be sufficient, or become excessive under these conditions.

Let us take up the various diseases of the heart.

Pericarditis

Pericarditis may be Septic. I saw one case at an autopsy, in Urban Hospital, Berlin, where the pus in the Pericardial Sac contained a Gonorrheal Germ, but this is extremely rare and accompanied always by a general Septicemia, (blood poisoning).

Pericarditis is a very rare disease. It is inflammation of the Bag or Sac which covers the heart,

much similar to the Pleura covering the lungs. The surfaces are smooth and secrete the serous fluid which enables the pumping action of the heart to be effected with no friction. When it does occur it is extremely painful having a constant stabbing pain in the region of the Apex of the heart and rhythmatic to the heart beat.

Like Pleurisy there is no remedy which meets its rapid correction so efficiently, as the prolonged Hot Dry Pack, preferably the Hot Cabinet Pack. The treatment of this disease should be prompt and efficient. The irritation excited by the pain is very apt to throw excessive muscular effort on the heart and injure the Valvular Structure of the heart walls.

The Cardiac distress from Spasm in and about the Pylorus is liable to be mistaken for Pericarditis, and care should be taken to afford proper contraction of the stomach and relaxation of thePylorus in all cases of suspected Pericarditis before the sweat is undertaken.

Fully ninety-five per cent. of Cardiac or heart distress *is reflex from the stomach.* In all conditions of Heart Disease the *Stomach should receive* exceptional attention, so as to relieve any complication that might arise. To get a better understanding of this, it is necessary to have knowledge of the nerve supply of the stomach, heart and lungs. Generally speaking, the stimulating nerves of motion consist of Ganglions (groups) of nerves,

which excite muscular action in these organs. They are separate and distinct, and simply packed upon the organ in which they are located. On the other hand, the motor inhibitory or motor control nerve is primarily connected with the brain, that is the Pneumo-Gastric or, as commonly called the Vagus Nerve, and spreads over the heart, lungs, stomach, liver and part of the intestines.

Thus it can be seen where we have an excessive muscular stimulation in the stomach, and reflexly an excessive muscular stimulation thru this nerve to control this excessive action in the stomach, we have an Extreme inhibition of the lungs, heart and the liver. The characteristic palpitation that comes from agitation is a simple illustration of this. The faint that follows a blow in the Solar Plexus is another illustration. The Vertigo from impaction of the Gall-Bladder, to a modified extent, is also illustrative of this.

Thus it can be readily seen that before we arrive at the grave conclusion that the heart is affected, it is decidedly imperative that we be certain that the condition is not a reflex from the stomach, the liver, or the lungs.

Unfortunately, most of the Medical Authorities are prone to make the Lungs secondary in their Lesions to the Heart; while in reality the probabilities are, that most of the Lung Lesions that excite heart conditions *are primary,* and the Lesion

in the Heart is merely the outcome of the condition in the Lungs.

In correcting Asthmatic conditions where the Heart is involved, the treatment should be concentrated on the Asthma rather than on the Heart.

Myocarditis

Myocarditis is a secondary condition resulting from either the stomach, liver, lungs, or defects in the lining of the muscle itself. Myocarditis in reality is inflammation of the muscle of the heart, and can only be produced by a blow or a strain.

Practically all Carditis is the result of a strain. The rhythmatic soreness in and about the heart, with occasional stabbing pain running from the Apex of the heart up to the left shoulder are the symptoms. The treatment of this condition is rest, not only in bed but rest to the stomach, liver and the lungs.

The Local Application of the Ice Pack over the Heart is indicated. The Apex of the Heart lies directly beneath the Pleura, and close to the chest wall, and *prolonged cold* will be radiated into the actual muscle itself. With the *entrance of cold* we have *the inhibitory effect on the motor-stimulating nerves,* when the heart muscle and the heart *stimulation is then reduced to the minimum;* thus affording the *inflamed and strained heart, best opportunity to recover.* This Ice Pack should be maintained over the heart from thirty-six to

seventy-two hours. The patient should be *fed on the blandest of diet.* Skimmed Milk is readily tolerated in the stomach, and in addition the excess of water increases the action of the kidneys and drains off the blood affording a reduction in the blood pressure.

For the first seventy-two hours of this disease the diet should be exclusively Skimmed Milk. High Colon Irrigation should be practiced at least once in twenty-four hours, and where there is any gaseous distention the rectal tube should be permittted to lie within the rectum above the *internal spincter to permit the rapid escape of gas.*

With the application of the Ice Pack over the Heart, evidence of collapse will rapidly disappear.

The use of Heart Stimulants cannot be too vigorously condemned. The custom of Hypodermically using Strychnine in these cases is counter-indicated as it destroys Nature's opportunity to meet this condition, and aggravates it.

Endocarditis

It can be readily recognized that the lining of the heart is practically a continuation of the lining of the blood vessels, and the only avenue of disease must necessarily come from the blood itself. It can readily be seen that the infection or the products of improper tissue changes that exist in the blood, more easily find deposit in the finer crevices of the Heart Chamber, that is, in and about the

Valve itself and its tendinous attachment.

Again, the tension or labor put upon these valves necessarily renders them more susceptible to disease, than tissues that are not called upon to perform such strenuous work. Thus, it is that in many diseases of grave type where the blood is affected, we have, frequently, *a deposit* of *the infection* in and about the *valvular portions of the heart lining.* Scarlet Fever and Diptheria, are frequently accompanied by a mild Endocarditis. Rheumatism because of the excessive amount of Sodium Urate found in the blood is frequently accompanied by Endocarditis. In the treatment of this first mentioned disease it should be a matter of first importance to correct the Cardiac involvement.

Again, the Kidneys being the safety valve of the quantity and quality of the blood within the blood vessels, it can be readily recognized that any defect which would stop this safety valve from discharging the excessive quantity of blood, would necessarily result in a distention and increased blood supply, and increased labor upon the Valves to prevent the blood from being damned back into their Heart Chambers, or into the veins themselves. Consequently, progressive conditions of the kidneys are always accompanied by an increased strain upon the Valves of the Heart, with dilatation of the chambers, and greater muscular effort. So that it is a matter of grave importance, during every acute and every chronic disease, that the safety

valve of the blood, that is the Kidneys, perform freely its function of draining off the quantity of the blood.

While evacuation of the bowel is periodic, the actual discharge of the waste material from the blood into the bowel, or High Colon, is constant. So that, to assist and relieve the Kidneys in all acute conditions it is very necessary that the Colon have freeOsmotic Action to discharge the waste material. In other words, with the increased discharge of the waste material into the water in the Colon, there is a relatively increased seeping of water into the circulation, and consequently, such waste products as are not carried off by the bowel are diluted, and rendered bland by the increased fluidity of the blood. Thus, it can be readily seen how very important it is, and what far reaching benefits are obtained, by the use of the High Colon Irrigation in every acute manifestation, not only to abort and lessen the disease, but also to prevent grave results in the heart.

In all acute manifestations of Endocarditis, the diet should be the minimum. Rheumatic manifestations are the most common in the heart. It is characteristic of the Urate of Soda to become attached to part of the white fibrous tissues that line the heart and the joints. Not infrequently are these Soda deposits found Calcified in and about the tendons and valves of the heart at autopsies. As I described in the chapter on Rheumatism, the

rapid evacuation of the Gall-Bladder, and the rapid elimination of waste products, as well as the moderation of the diet, should be the treatment in all Rheumatic manifestations of the heart. Needless to add that these cases require *absolute rest.* The visits of friends should be positively proscribed. In fact, during all acute manifestations of Rheumatism and Gout, the patient should suspect the probability of heart involvement, and during that period should not aggravate the condition by any excessive strain upon the heart action.

Chronic Valvular Conditions

In a work of this character we must generalize. The finer points in diagnosis are not necessary.

The Hydropath seeks results, and seeks Nature's method to overcome these results, and as his effort is to cooperate with Nature, the minute differences of heart involvement play practically unimportant part. The text-books are filled with obstructive valvular conditions, insufficient valvular conditions, regurgitant valvular conditions, etc. However, fundamentally, there is an improper promotion of the blood because of some Organic Lesion within the mechanism of the pump, that is the heart. If it be in the right side of the heart the early manifestations are in the lungs. If it be in the left side of the heart the early manifestations are otherwise in the body. Our great aim

is to help Nature to meet this defect, and in capital letters our intentions should be prescribed in HEART REST.

In these conditions, fundamentally, we have an excessive stimulation, because of the labor within the heart muscle of the motor-stimulating nerves, and reflexly the excessive stimulation of the motor-controlling nerve, that is the Vagus Nerve. So that, as a constant factor in these conditions we have excessive heart stimulation and anything that will tend to increase heart stimulation, such as Digitalis, Strychnine, Spartine, etc., is simply increasing the very thing that we wish to correct and modify. Where there is a deranged and insufficient action in the heart to meet a fairly good accommodation, it is due to excessive stimulation, and lack of coordination between these two systems of nerves, and are thus stimulating where our aim should be to modify. Whenever this condition exists, the Local Ice Pack over the Apex of the Heart is indicated. As I described in the beginning of this chapter, the heart being directly beneath the chest-wall, the prolonged freezing moderates the action of both the motor-stimulating and the motor-inhibitory nerves of the heart, and moderately lessens the deranged action. *There is no menace in the use of this* Ice Pack *provided twice daily the Pack is removed, and moderate massage for three or four minutes is performed over the heart.* Even in conditions where there is

a fair compensation with practically little or no Cardiac distress, the custom of placing a piece of ice, wrapped in a napkin, over the heart and maintaining it in position for an hour or so on retiring has a far reaching beneficial effect. In the soothed condition accompanying and following the use of this Ice Pack, the patient in his sleep affords the best rest for the heart.

Of equal importance is the necessity of requiring the heart to do little or no work. The less blood pressure we have, the less difficulty the heart has to propel the blood thru the vessels, and consequently the safety valves of the blood pressure should be promoted to their most efficient functional activity. The drinking of two glasses of cold water on rising, when the stomach is empty, will usually secure free diuretic action of the kidneys, and will promote evacuation of the bowel. This should be the positive routine custom of everyone suffereing from even the slightest form of Valvular trouble. It should be supplemented by the bi-weekly or more frequent use of the High Colon Irrigation to insure satisfactory elimination of the Colon and the kidneys.

The diet plays a very important role in these conditions. The general custom of eliminating meat, because of the excessive formation of Urates, should be modified. Keeping in mind the close relationship thru the Vagus Nerve to the Heart, food should be as a general rule, bland. The use of

coffee and condiments, such as peppers, spices, etc., should not be allowed. On the other hand, it must be borne in mind, that we are fundamentally endeavoring to secure a compensation, and to a certain degree an excessive development, and we require ample nourishment in these cases. In the case of gradual improvement, we obtain the best results from a moderate mixed diet. In cases of fairly Advanced Valvular Derangement, where Dropsical manifestations have begun, the cooked fruit and Skimmed Milk diet should be strictly adhered to.

The fatality of Valvular Lesions is greatly exaggerated. In my early student days we were taught that a Mitral Lesion of the Heart was of a year and a half duration, and yet I have seen cases that had a decided pronounced Mitral Regurgitation live in apparent comfort, performing light labor, for twenty years, and die of *other lesions*. In other words, with the affording of opportunity for the heart to accommodate itself by increased capacity for receiving blood, and an increased muscular development for expelling blood, Nature will meet this emergency. Occasionally, Inhalation of Oxygen in these conditions is extremely beneficial. In fact in all conditions of collapse, oxygen should be the sole medium to promote recovery. Rarely, is an excessive strain upon the left heart sufficient to excite collapse, and it is only when the right heart is involved that we

have conditions of extreme prostration manifest. With the inhalation of oxygen, relief is very readily afforded in these cases. The custom of five to ten minutes exposure to oxygen at the noon-hour is one that should be encouraged. It will relieve and rest the heart from the labors of the morning and re-strengthen it for the additional work of the afternoon.

It is my conviction that men past fifty would benefit greatly if they had an oxygen tank in their offices and instead of a hearty meal at the noon-hour, they would indulge in a five minutes inhalation, followed by a light lunch.

When Dropsical conditions manifest themselves, the skin should be called upon to assist in the elimination. Contrary to the general conception, the Hot Cabinet Pack when the patient has ample access to fresh air, rapidly invigorates the exhausted patient, because of the lessening of the blood pressure which it accomplishes. The duration of the Hot Cabinet Pack or the Hot Dry Pack depends upon the severity of the Dropsical manifestations. Where the Dropsy is advanced, the sweat should be prolonged and vice versa, but it is always a good practice to prolong the sweat than otherwise. An occasional whiff of oxygen during the sweat in extreme cases will prove a splendid invigorator.

CHAPTER XIX

Pulmonary Diseases

Contrary to what the general impression is, I begin my discussion of this class of diseases by saying that the vast majority of pulmonary conditions are secondary, and not primary in their origin. This may seem strange to the public, as well as to the Medical Profession but the fact remains that a logical analysis of the subject will verify my statements.

We find in a healthy Lung and a healthy Bronchial Tube the germs of the various Pneumonias. Lobar and other Pneumonias present germs that are inert in the presence of healthy tissue and healthy blood circulation, and it is only when we have some derangement in the actual tissue itself or some depleting condition in the blood, or some disturbance in the circulation of the blood in the lungs or the Bronchial Tubes that we have actual disease of this system of organs.

It is not very uncommon for a man, not exposed to contact with any contagion or infection, to feel severe fatigue or suffer exposure to wet and cold, either of which is capable of deranging the circulation of the pulmonary system, to develop Lobar Pneumonia. Localized Lobular Pneumonia is a

common complication of any Cardiac disturbance, such as we find in Endocarditis or in Hepatitis, caused by the deranged circulation. The extreme strain of a Paroxysm of whooping cough not infrequently excites a Broncho-Pneumonia. The Cachexia of Malaria will very frequently result in an incipient form of Pulmonary Tuberculosis. While again, the congestive manifestations of an Acute Malarious Infection will very frequently result in an Acute Pneumonia.

Because of the frequency of this latter condition, during my student days it was the uniform practice to treat Pneumonia successfully with liberal doses of quinine. Enlarged spleen is prone to excite pressure, (in spite of the strong tendinous muscle of the diaphragm) upon the left lung, and the involvement of the left lung in contrast with that of the right lung occurred in the greater number of cases.

Typhoid Fever very frequently is the producing cause of Pneumonic manifestations. Head injury and very commonly the degenerating changes of old age, result in Catarrhal Pneumonia.

The general conception that we become readily infected in the lungs, because of the innoculation of various germs is erroneous. Practically no foreign bodies, even minute bacteria, ever find their way into the Bronchial Tubes. In other words, in correcting Pulmonary conditions it is a matter of first importance to seek out the exciting cause

and to eradicate it. It must be kept in mind, that the lung tissue is tough, yellow, elastic, having practically no functional activity other than to support the blood vessels, and by the elasticity of the tissue itself, expels air with the relaxation of the muscles of respiration. There is practically little or no cellular element in the lungs, and the circulation of the lung tissue itself in contrast with the lining of the air passages is extremely slight, as inflammatory and degenerating changes, rarely, if ever, actually involve the lung tissue, and if so are merely the results of continuity, and are slowly progressive in character. Autopsies rarely show any destruction of the actual lung tissue, even in advanced conditions of Tuberculosis, the destruction being confined largely to the air passages. It is very important to keep this fact in mind, because of the drainage which is afforded the air passage; the air passages having more or less connection into the mouth and nose. This affords drainage an opportunity to expel the Necrotic Exudate of inflammation of the air passages and air chambers.

Anatomically and physiologically speaking, pulmonary conditions should be among those considered of the less serious of the ailments that effect the Human Economy. However, they are looked upon as being the most common and the most grave of diseases. This is largely because it is not recognized that these Pulmonary conditions are the

result of other conditions, and are largely secondary to them. Fully thirty per cent. of Tubercular patients will present manifestations of Malaria in their blood and spleen, and the great benefit obtained in the woods and at the seashore, in a number of these cases, is due to the increased oxygen which the depleted blood of Malaria is able to obtain in these sections.

Pneumonias are extremely rare in the Torrid Zone in contrast with the Temperate and Frigid Zones and yet Malaria predominates in the first mentioned place. This is largely due to the fact that the active perspiration of the skin drains sufficient blood from the lungs to prevent any disturbance in the circulation of the air passages. When we speak of circulation of the lungs, it must be borne in mind, that the circulation is really the circulation of the air passages and air chambers, and not of the actual lung tissue; this tissue circulation being practically insignificant. The nutrition required by the lungs being extremely moderate and in the absence of cellular element in the issue there is practically little or no tissue changes going on in the actual structure of this organ.

Pharyngitis

Pharyngitis is commonly called a Sore Throat. The fact that in this disease swallowing is painful is indicative that the diet should be temporarily fluid. Unless there be an actual involvement of

the Tonsils, (I will take up the question of Tonsilitis in a separate chapter) these conditions readily correct themselves. The old-fashioned habit of giving Johnny a dose of Castor Oil, and putting him to bed and giving him a sweat should be substituted by the use of the High Colon Irrigation and the application of the Local Cold Wet Pack, not only over the throat, but extending over the chest and abdomen as well.

Laryngitis

Laryngitis is generally characterized by hoarseness. The same treatment is indicated as in Pharyngitis, except that the patient should not add to the irritation of the vocal chord, and should abstain from speaking until all inflammatory changes in and about this organ have subsided.

Bronchitis

Bronchitis is usually secondary. The condition is one that affects the air passages, and is dependent upon deranged circulation. This may be disputed, but when we keep in mind the fact that practically every form of disease producing germ, can be found somewhere within the air chambers in the healthy lung, it can be recognized that there must be some depleting condition that promotes these germs to excite disease. It is my conviction that the very process of oxidation of the blood is in itself effectively Antiseptic, and it is only where

there is some condition which interferes with this oxidation, that the pathological results from bacteria occur. This is borne out clinically. Practically every condition of Pulmonary disease will improve during the administration of oxygen, and when this remedy is more frequently administered in Pulmonary conditions it is largely probable that its Therapeutic value will become recognized. Whether it be of Acute or Chronic manifestation, the treatment is to correct congested conditions, and promote normal oxidation in the parts. Anything which tends to relieve the congestion is indicated. In young children the Hot Dry Pack will be found usually satisfactory; but it is far inferior in these cases to the Local Cold Wet Pack. The Cold Wet Pack should be applied from the throat to the knees and in the presence of fever should be repeated every hour, but with the disappearance of the fever, every two hours application will be sufficient.

No effort should be made to check the cough. The use of Paregoric and Sedatives to relieve the cough is criminally antagonistic to the physiological efforts of Nature to throw off the waste products of the inflammation. With the relief of the local congestion it will usually be found that the manifestations of the cough and irritation will disappear within from ten to fifteen minutes, following the application of the Cold Wet Pack. Osmotic action of the High Colon Irrigation, as well as its

reflex stimulation of the liver, should be repeated twice daily in these conditions. The diet in Bronchitis whether Acute or Chronic should be bland and light. The cough is apt to excite muscular derangement in the stomach contractions, and coarse foods should be avoided. However, a well cooked general mixed diet is advisable.

Be suspicious in every case of Bronchial involvement, of the possibility of Malaria. One of the best guides is where the Bronchial condition becomes intermittent. Where the relief is not permanent it can, with a fair degree of certainty, be concluded that an underlying condition of Malaria exists.

Pneumonia

The line of demarkation between Bronchial Pneumonia and Pneumonia is so insignificant, that it requires no discussion in a book of this character.

With the pronounced chill, and the fever following, we readily accede the involvement of the air passages. In other words, the process of inflammation has passed beyond the tube, and has gone into the air chambers, rather one of increased extension of involved tissues. The treatment is identical. The High Colon Irrigation, application of the Cold Wet Pack, changed hourly during the manifestations of cough and fever, and subsequently every two hours. Diet in these cases should be light; avoid coarse foods.

In discussing Lobar Pneumonia. I wish the reader would keep in mind the statement that I made at the beginning of the chapter, that is, that all *Pulmonary conditions are largely secondary.* During my early years of practice in the Borough of Brooklyn, this dread disease was extremely prevalent. All the manifestations typical of Lobar Pneumonia were common. This section was particularly Malarious. The flat plains in the East New York section were loaded with the Malaria poducing mosquito that swarmed in from Canarsie. The Williamsburg section, Maspeth, Newtown, etc., were loaded with swamps in which Malaria thrived. These conditions were exceptionally fatal, and their fatality seemed to increase with the introduction of the use of Coal-tar products to treat them. It was an easy thing for the physician to give five or ten grains of Antipyrine, check the cough and reduce the fever, but usually the third day to write out a Death Certificate.

In several hundreds of these cases I found the actual germ of Tertian Malaria present, and it was my rule to always treat Lobar Pneumonia as one of the manifestations of Malarious infection. Altho I practiced in this Borough for ten years, it is my pride to say that I never lost a case of Lobar Pneumonia, though I treated more than a thousand of these cases in the ten years of my practice in that city. My preceptor made it a uniform practice to treat Lobar Pneumonias with

liberal doses of Quinine. His routine practice in Lobar Pneumonia was to prescribe five grains of Quinine every three or four hours, and these heroic doses gained for him an exceptional success in the treatment of this class of disease. Altho he was a man of superficial medical knowledge he treated the primary cause of Pneumonia, and in this way relieved the condition.

I have come to look upon Pneumonia as a disease of rare and benign type. The rapid results from Hydrotherapeutic Treatment have convinced me that its seriousness lies, not in the actual condition in the lung, but, in the primary cause of this condition. Physicians as a rule are gravely in error when they concentrate their examination to the chest in conditions of Bronchitis and Pneumonia, and the regularity with which they ignore examination of the blood, and the spleen is almost criminal in its neglect. Keeping in mind that the circulation of the air passages and the Bronchial tubes is very active, it can be readily recognized that these, thru any congestive disturbances, can quickly result in inflammatory changes in and about these air chambers. The very activity of the circulation of the air chambers is indicative of the rapidity with which the congested condition in the lungs can be corrected. It is a source of great astonishment, the rapidity with which all evidences of Pneumonia will disappear, when the blood is rapidly drained from the air passages into the

skin and other organs. Not infrequently it is possible to correct the cough and fever within an hour, even checking the various stages of "Hepitation" (Exudate).

The first treatment of Pneumonia should be the High Colon Irrigation. Reflex draining from the liver affords almost instantaneous relief while the Osmosis into the Colon will relieve the blood pressure very rapidly. Where the temperature reaches 104° or above, the General Cold Wet Pack is indicated, even enveloping the ears and neck, and merely affording opportunity for respiration and an opening to the oral passage to feed water. Where the temperature is below 104° the Local Wet Pack will be found sufficient.

Doctors Winternitz and Guenther, claimed that the vapor generated next to the skin under the wet cloth produced marked local diaphoresis (sweat). However, the Osmotic action, in my opinion, is of more importance than the excitement of the sweat.

It must be kept in mind, that whether the case be one of Lobar or Croupous Pneumonia, Lobular or Bronchial Pneumonia, the infection is always a mixed one, so that the Toxins or the Autogens are best generated by Nature within the body of the patient. For this purpose the copious drinking of water should be encouraged as well as a fairly frequent use of the High Colon Irrigation. In grave conditions, the High Colon Irrigation can be used as often as every five hours.

Frequently we are unable to arrive at what is the primary cause of the Pneumonia, as usually we find present a number of conditions which can be attributed as the exciting causes or one of the exciting causes, and it is in accordance with prudence to attack every possible condition that would excite Pneumonia. Evacuation of the Gall-bladder by massage will relieve the circulation and discharge a great many poisons that are generated in the liver and otherwise, and massage of the Gall-bladder should be practiced.

The acute manifestations of Malaria should primarily be met by the use of Quinine. It is not prudent to undertake the correction of Malaria in grave cases during early manifestations of Pneumonia, by the use of excessive sweat as we use in uncomplicated Malarias, because of the resistance Nature affords in marked febrile conditions to the production of diaphoresis. In grave Pneumonias I unhesitantly advise a minimum use of Quinine. However, in the ordinary Pneumonia with temperature under 104° this will not be necessary, and after the disappearance of the Pneumonic conditions, that is after twenty-four hours, the Hot Dry Cabinet Pack is recommended. Diet in Pneumonia requires special attention. With the shock of Pneumonia not only is there a grave derangement in the system of the Vagus Nerves which control the stomach, lungs and heart, but there is also a marked derangement thru the cerebral spin

al system, and the sympathetic nerve system which regulates involuntary activity in the stomach. Consequently, it is largely necessary, that during febrile manifestations, little or no effort be required by the digestive system to undergo any functional activity. Again, the close proximity, both anatomically and reflexly, between the digestive tract and the pulmonary system affords splendid opportunity for the Osmotic effect of water in the digestive system to relieve any congested condition within the lungs. During the first twenty-four hours the patient should be encouraged to abstain from all food.

On the other hand, the oxidizing power of the lung is to a greater or lesser degree diminished and the blood consequently is less capable of oxidizing the Glycogen of food. This condition is one in which alcohol, as a food, plays a very important role. Alcohol is very readily oxidized and finds rapid entrance into the blood. Sugars are substantially nourishing and require practically no digestion in the stomach and merely a diastatic action in the intestine. Alcohol and sugar in small doses should be the diet in Pneumonia for the first twenty-four to fourty-eight hours. Alcohol does not interfere with the Osmotic action. While light wines and whiskey may be used, since the Volstead Act, the quality of alcoholic beverages is so questionable that grain alcohol, diluted with water and sugar, meets the indication more safely than other-

wise. A teaspoonful of grain alcohol and a teaspoonful of sugar into one-half pint of water will prove satisfactory food during these stages. Remember, that the boiling of water evaporates the alcohol very readily, and if it be desired that the sugar be dissolved more rapidly in the water, the water and sugar should be boiled togther, and when cool the alcohol added. This food can be given almost ad libitum.

The Medical Profession is too apt to look upon the use of oxygen as the means of last resort in collapse, to excite increased heart action. The use of oxygen in Pneumonia requires less effort on the part of the diseased organ, affords rapid destruction of the infecting germ, and by the increased oxygen being absorbed in the blood, rapidly restores depleted tissue changes within the blood itself. The curative action of this gas is not generally recognized. It is in direct accord with the objects of Hydrotherapy to encourage natural methods of recovery, and oxygen plays a very important role in the normal physiological activity of the human system. The physician or the parent should not wait until collapse has occured. The first manifestations of labored breathing indicates that the blood is not obtaining a sufficient quantity of oxygen, the patient is making strenuous efforts to supply the demand, and this should be an indication for the use of oxygen. However, as a very general rule, with the early use of the

High Colon Irrigation and the Local Cold Wet Pack, the grave symptoms will disappear in a very short time, frequently within fifteen minutes.

The after treatment of Pneumonia requires special attention. The right side of the heart, or as we usually say, the right heart, pumps the blood thru the lungs, as a rule the effort is uniform in contrast with the effort on the part of the left heart, which increases and relaxes according to the demand put upon it, by our voluntary efforts. The supply of blood that goes thru the lungs, is identical with the quantity which goes thru the rest of the entire system. In other words, all the blood must be oxidized in the lungs so that the vascularity of the air passages is immense, as any subjection or restriction throws great labor on the part of the heart to overcome it. Following Pneumonia a prolonged period of rest is necessary, not only to enable the lung to resume its normal condition, but to afford the heart ample rest from its excessive action. The prone position in bed, with plenty of ventilation, should be maintained in Pneumonic cases for at least a week. Most of the so-called "Relapse of Pneumonia" is nothing other than a failure on the part of the right heart to properly propel the blood thru the air passages, and the character of the Pneumonic changes from the acute type, to the catarrhal type.

To relieve the congested condition and the labor of the right heart as much blood as is possible

should be maintained away from the lungs. When all fevers and cough have disappeared the High Colon Irrigation should be maintained twice daily for fully a week after these symptoms have subsided. The Cold Wet Pack on retiring at night is a splendid preventive against relapse. With the return to free respiration, the patient should be encouraged to eat largely of proteids, that is meats, eggs, milk, fish, etc. The Glycogen of the proteids oxidizes more rapidly than does the Glycogen that comes from the carbohydrates, and consequently less strain is put upon the weakened lung, by the almost exclusive diet of proteids.

For several weeks after the acute manifestations have subsided the diet should be almost entirely of proteids.

PLEURISY

Pleurisy can be classed almost exclusively as a secondary disease. Occasionally we may have as a result of traumatism or excessive exposure, a local congestive condition, but this usually is benign in character. In practically all of the so-called Dry Pleurisy, that is Pleurisies that have no exudate or fluid in the pleural cavity, I have found them to be nothing other than spastic conditions about the pylorus radiating upward towards the shoulder blades, usually the right. Not infrequently Small Stones passing thru the Gall-Duct have been mistaken for Pleurisy. Pleur-

isy as a rule, is secondary to Pulmonary conditions and is affected only by continuity of the lung tissue. The onset is usually not so rapid as that of the lungs, and they become involved only as the condition in the lungs progress. The efficiency of the Hot Cabinet Pack maintained for from five to eight hours in these conditions warrants its use in preference to all others in the treatment of this disease. However, where there is a complication of Pneumonia, the treatment of Pneumonia will be found usually efficient, but frequently we find cases where Pneumonic manifestations have subsided and Pleurisy with effusion into the Pleural cavity present.

My own conviction is that fluid in the Pleural cavity is looked upon by the Medical Profession in a rather too grave an aspect. While it is true that puss frequently appears in neglected cases of this type, yet it is also true that Nature is able to absorb and oxidize pus under proper conditions. The efficiency of Nature taking up water wherever it can find it, under the stimulation of the Hot Cabinet Pack has rarely been recognized. The Pleural Cavity is directly under the skin and this proximity to the skin plays an important role in the absorption of fluid to be excreted by the sweat. So that, the fluid in the Pleural Cavity has the precedent over the water ingested into the stomach, when the supply is profuse. Where the fluid in the Pleural Cavity is excessive the sweat of

four to five hours duration in the Hot Cabinet Pack should be repeated every second day until all manifestations has subsided.

Emphysema is Pleurisy with pus. The treatment is identical with that of Pleurisy. However, the pus may become encysted and denied opportunity of absorption. In that event it may be necessary to open the cavity and draw off the pus. The custom of excising a portion of the ribs to drain off the pus has strong arguments against it. With a simple opening the duration is lessened, and recovery more rapid in contrast with conditions where a section of the ribs has been removed. When the pus is once drained away the repeated use of the Hot Cabinet Pack will usually result in disappearance of all manifestations. It is impossible to remove a section of the ribs without either severing or injuring the subcostal nerve which has the function of not only controlling muscular action, but is a nutrient nerve as well, thus the process of repair is interfered with when the nerve is in this way affected.

ASTHMA

Asthma is a secondary disease and it frequently is impossible to find the exciting cause, as many conditions will excite Asthma. Among them, Gastroptosis leading; are Polypus, Hay-fever, and Valvular Lesion of the Heart. If possible, it is advisable in all of these cases to secure proper re-

laxation of the pharynx by contraction of the stomach, and not infrequently this in itself will result in correction of the attack. Inhalation of hot steam will afford relief during an attack. Between attacks the use of the High Colon Irrigation and Abdominal Massage should be practiced twice daily. The Cold Wet Pack to relieve any congestive conditions in the throat or chest should be practiced on retiring.

CHAPTER XX

Tuberculosis—The White Scourge

Tuberculosis is usually slow in its manifestation. Only too frequently these symptoms are remote from the time and place of the primary infection. The knowledge that the majority of folk are immune to Tuberculosis, has given people in general a feeling of safety from the disease. Therefore, very little apprehension is felt by most of us in exposing ourselves to contact with it.

The Tubercular germ is found more or less frequently in the air passages and air chambers of normal healthy lungs, without any manifestations, local or remote, of Tubercular infection. It is a question, whether this germ is an accompanying factor in the disease or a producing cause.

Clinically, it would seem that the lining membrane of the air passages and the air chambers, when in a fair degree of health, are able to resist the encroachment of the various bacteria found in these localities. This is true not only of Tubercular germs, but also of the various Pneumonia germs. The infection is merely secondary to some local or remote cause, other than the germs themselves.

I am convinced that *Malarial degeneration of*

the blood is a very frequent underlying cause of Tuberculosis. In more than thirty per cent. of the cases of Tuberculosis examined by me, the enlarged spleen and the decayed red cell, with occasional actual Plasmodia of Malaria, were present. The frequent development of Tubercular manifestations following Bronchitis and Pneumonia would indicate, not only that the destruction of the membranes of the air passages and chambers by these diseases offered avenues of entrance to the Tubercular germ, but also that the depleted vital powers rendered the resistance to the infection inadequate.

The remote development of Pulmonary Tuberculosis, following or accompanying a Tubercular Rectal Abscess and Fistula, is due not only to the transplantation of the Tubercular infection, but likewise to the depleted vitality resulting from the Abscess. The frequency of Tubercular development, accompanying Syphilitic infection, not only in the Pulmonary system, but in the joints, glands and bones, is due to the depleted vital powers and the lessening of their ability to resist Tubercular infection.

Therefore, it must be remembered that in a vast majority of cases—in fact, in practically all cases of Pulmonary Tuberculosis—there is an underlying depleting cause, which complicates the Tubercular manifestations, and it should be our purpose to correct this underlying cause in our efforts to

correct this grave and prevalent disease.

With this in view, every effort must be exerted towards promoting physical vigor. All displaced organs in the abdomen and pelvis should be replaced in their normal position and stimulated thru *systematic massage.*

As a routine practice in all Pulmonary affections, the examination should include a thorough physical and laboratory test of the abdominal organs and their contents. I know of no graver crime against humanity than the indiscriminate prescribing of medicine, such as Creosote, Duotal, Guaiacol and other irritating drugs and compounds, whose only action is still further to break down the digestive functions of the stomach and liver. I have seen many patients whose opportunity to regain normal, healthy Pulmonary, conditions were denied them, because of a liver diseased by Creosote.

The cure of Tuberculosis depends entirely upon a favorable Hygienic environment, nutrition and rest. In a volume of this size it is impossible to discuss the relative value of altitude, air pressure, etc., beyond saying that while the underlying cause of Tuberculosis is frequently benefited by changing altitude and environment, these factors should not be exaggerated, and the recovery of the patient made solely dependent upon the benefits obtained from the air and the rest, as is the system followed almost solely at Saranac.

Neither can I see the wisdom in the superabundant proteid diet. Milk and eggs have very little waste, and therefore excite very little activity on the part of the liver. I prescribe a general mixed diet in all my cases. A further argument against the milk and egg diet is the close relation between the circulation of the liver and that of the lungs, as is well recognized by all students of physiology. The sluggish habit of the liver induces engorgement of that organ, and directly, thru the circulation, and reflexly, thru the Sympathetic Nerve System, brings about engorgement of the lungs.

The mechanical irritation and pressure caused by the cough in a very great many of these cases *result in a displacement of the stomach and a consequent torsion of the pylorus, interfering with the discharge of bile from the Gall-bladder.* This fact must be kept constantly in mind, and vigorous massage of the abdominal cavity should be practiced daily in most cases, to meet this exigency. While on the subject, I would urge the consideration of both barley sugar and maple sugar as important articles of diet in Tuberculosis. Not only are these sugars extremely nutritious, but they contain an excess of the tannates, which are mildly stimulating to the activity of the liver and to the fluidity of the bile.

In Tubercular conditions we have, as in Malaria, a mild chill, usually in the afternoon, followed by a moderate rise in fever and this, in turn, by the

cold sweat. After the sweat there is a period of relief, and in many cases, a sense of actual exhilaration.

The Hot Dry Pack with Tubercular patients must be carried out with such moderation as will be tolerated by the patient. As a very general rule, the blood is subnormal in its organic state and functional activity, and the duration of the Pack should be gauged by the actual vital powers of the patient.

In an acute Miliary Tubercular condition, I have in my practice maintained the Pack as long as ten hours. But these were only in cases where the underlying conditions did not indicate that the use of the pack for that length of time would be inadvisable. As a rule, a three to five hour exposure to the Hot Dry Pack every second day will produce the best results. The rapid disappearance of the Pulmonary symptoms after a five-hour exposure will be a source of astonishment to physicians, as well as to the patient. As a rule, all cough, congested conditions, and physical manifestation in the lungs will have become decidely modified, even in Tuberculosis of long standing.

The benefit is apt to blind both the patient and the physician, to the underlying condition that in reality is the producing cause of Tuberculosis. It is fortunate that the treatment of Malaria is largelyly identical with that of Tuberculosis, and in eliminating the Tubercular infection, we promote

the elimination of its Malarial complication. In those cases where Malaria exists, the improvement will be gratifying. The benefits of Gastric Lavage and massage in these conditions is very marked, as a rule.

Complete daily cleansing of the stomach with a very mild salt solution, accompanied by vigorous massage and High Colon Irrigation upon retiring, not only promotes a healthy appetite in the morning, but enables the stomach and intestines to put forth their best efforts to digest and assimilate the food. I have seen cases gain fifteen to twenty pounds in weight, with vastly increased vigor, under this method.

In giving Lavage in Tuberculosis, my practice is to use about three quarts of water to effect a thorough cleansing, and to follow the Lavage with a glass of cold water to promote Osmosis, relieving not only the stomach condition, but remotely the lung congestion.

After the High Colon Irrigation in the evening, the patient is placed in bed with a Hot Water Bag to his feet and a moderate Cold Wet Pack over the chest. He should sleep on the porch or in a well-ventilated room.

An ordinary mixed diet of meat, vegetables, cereals and breadstuffs is best for the patient; and remember that I am especially favorable to maple sugar, both in the cake and in syrup form.

The course of treatment necessary to promote recovery will rarely exceed six weeks. However, the Hot Dry Cabinet Pack should be carried on for its prophylactic effect at semi-monthly intervals for at least a year, to insure protection against a return of the disease.

The occurrence of hemorrhage does not argue against the use of the Hot Pack. In fact, the very lessening of the blood supply and blood pressure in the lungs afford splendid means of relieving hemorrhage in the lungs.

In case Tubercular Abscess of the Rectum develops, proper drainage should be secured, and a Local Cold Wet Pack placed over the affected region to promote Osmosis and recovery.

In using the Hot Dry Cabinet Pack, the patient must be allowed to breathe fresh, cool air. In the hot atmosphere of a room, the patient will rapidly become exhausted from the strain upon the heart and lungs, in his efforts to obtain a free supply of oxygen from the air.

CHAPTER XXI

Diseases of the Blood

Practically every acute disease presents more or less manifestations within the blood-stream but the majority of blood conditions are secondary and chronic. When we eliminate Malaria, which is the most common of blood diseases, we practically eliminate all acute infective diseases that find their sole location in the blood-stream.

While it is true that occasionally we find the spirochaeta of Syphilis and the germ Grippe, Typhoid or Typhus in the blood, these are merely incidental with the origin, remote from the blood-stream itself. When we attempt to analyze the cause and the result of blood conditions we reach the stage of the chicken and the egg—which came first? Physiologists agree that the origin of blood is generated in the spleen and in the marrow bones, or more definitely the blood plaques are generated in the spleen, and converted into the red cells in the marrow-bone, while the Leucocytes (white cells) are largely originated in the internal glands. Roughly speaking, the blood is divided into three different constituents. The white cell which is capable of motion within itself and by its movement capable of having motion into the inter-

cellular space of tissue. These contain usually more than one nuclei and when the blood contains a large supply of single nuclear cells it is generally found to be accompanied by manifestations in the glands of internal secretion, that is, the Thyroid, the Thymus and the Pituitary gland. The red cell is a disc-like form, yellow in color and usually combined in rolls or series. They contain no nuclei and in themselves have no motion. These cells are largely propelled thru the various vessels in the fluid portion of the blood, which is usually called, the Plasma.

It must be kept in mind, that fully sixty per cent. of the bulk of the blood in the blood vessels is gases, and because of the expansibility of gases they maintain a fairly constant blood pressure, (this latter fact is of great importance in conditions of high blood pressure, where due to the sluggish activity of the diseased liver we have an improper functioning of gaseous changes with resulting increased pressure within the blood vessels).

As I said before, it is extremely difficult to arrive at the cause and effect of blood conditions. Malaria will excite inflammatory changes in the spleen and in the marrow-bones. So great is this latter fact recognized that for years thruout the Southern States, the pain that accompanies Malaria was frequently known as the bone-breaking fever. On the other hand, we also know that

Typhoid Fever which will excite inflammatory changes in the spleen will usually result in a depleted oxidation in the blood with resulting obesity. Over ninety per cent. of people having Typhoid Fever become fat after the attack. So that when we attempt to correct blood conditions our treatment must be such that will not only meet the probable cause but also the result.

The wide-cast findings of most of our pathologists of the manifestations of Syphilis in the blood, should be looked upon with great skepticism. The so-called Wasserman Test has proved very unrealiable and very misleading. The same patient on the same day in different laboratories will have a positive in one and a negative reaction in the other. It is my conviction, based upon logical reasoning, that Syphilis is a *glandular disease* and *not* a *blood-disease.* Long before any manifestations are evident in the blood, the glandular system is attacked and even in advanced conditions of this disease the relative proportion of red and white cells and the oxygen content of the red cells is usually found to be normal. While Spirochaete (germs of syphilis) may be found in the Plasma of the blood it is not as a rule attached to any of the cellular elements and under proper stimulation, such as is obtained by the use of Iodides the white cell is capable of destroying this germ.

ANEMIA

This term is very broad and may describe practically any derangement in the condition of the red cell; either in its oxygen-carrying properties or in its relative numerical relation to the white cell. Generally speaking, it refers to the deficit in the amount of oxygen in the cell and inability to oxidize Glycogen is usually evident and Obesity is the common result. Keeping in mind, the fact that Malaria is usually the producing cause of Anemia it is always advisable to supplement the treatment of Malarious conditions by treatment with vegetable iron. The diet in these cases should be a mixed diet in which the proteids should be abundant because of the inability of Anemic blood to oxidize the Glycogen coming from the Carbohydrates.

These are the cases that respond very readily to the liberal use of skimmed milk. . Fresh buttermilk in reality is nothing other than skimmed milk and may be used instead.

The High Colon Irrigation because of its draining the system of surplus of toxins and relieving the Carbonic Acids from the blood, should be followed persistently for months upon retiring.

Decoction of Peruvian bark as described in the treatment of Malaria affords vegetable iron free from the resins, and consequently directly increases the oxygen content of the blood. Needless to

add, fresh air, or air containing abundant quantities of oxygen is largely necessary. Anemic persons should *never go to the mountains* or higher altitudes but should live at or near the ocean where the atmosphere is more condensed and contains greater quantities of oxygen.

The amount of skimmed milk advisable in these cases should be gauged by the toleration. I have seen patients thrive on drinking as much as three or four quarts of skimmed milk a day. In these cases, however, due to the sluggish condition of the liver, which is always an accompanying factor, *eggs should be avoided* because of the fact that they are fruitful fields for decomposing bacteria in the Intestinal Tract.

HIGH BLOOD PRESSURE

Keeping in mind the fact that the bulk of the blood is gaseous, the avenues of elimination in these conditions should be encouraged. The High Colon Irrigation not only promotes the evacuation of the bowel; but also affords marked activity of the kidneys. Where the *blood pressure goes above* 135 or 140, *in middle life,* the patient should indulge in the High Colon Irrigation at least twice weekly.

Because of its affinity for salines and alkalines, free drinking of Distilled Water, upon rising, should be encouraged. In these cases the patient should drink two glasses of Distilled Water im-

mediately on waking and not indulge in food for at least one-half hour after drinking the water, in order to obtain the best diuretic action.

The occasional use of the Hot Cabinet Pack of from two to three hours duration affords splendid assistance to the kidneys and the bowels in eliminating the waste.

The diet in these cases contrary to what is generally understood, need not be entirely free from proteids. However, the use of condiments such as peppers, vinegars, coffee, etc., should be avoided. The midday meal of raw or cooked fruit by increasing the activity of the liver is strongly advisable in people suffering from this condition.

CHAPTER XXII

Bright's Disease of the Kidneys

From the Hydrotherapeutic standpoint, there is no such disease as primary Nephritis. For the congestive and inflammatory changes in the kidneys are dependent upon outside influence. The very function of the Kidneys is to react to external conditions, and to meet the demands upon them from these influences.

An increased tissue change prompts an increased excretion of Urea (animal matter in the urine). Even fright and shock have an effect upon the kidneys. The excess of secretion accompanying or following a fright is generally recognized, even among the Laity.

A retardation in the draining of the blood by the kidney will increase arterial tension, while rapid draining of the blood thru the kidney will diminish this tension. Therefore, the excess of action or diminished action of the kidney is remote in its effects, not only in a quantitative sense, but also in a qualitative sense in that the throwing off of the products of tissue change is retarded, or is in excess.

Acute Nephritis, in the majority of cases, is chemical in its origin. Carbolic acid, members of

the Benzol group—such as Soda-Benzoate, Aspirin, Antipyrine, and Bichloride of Mercury, are decidedly irritating to the tubules of the kidneys, and if taken in excess not infrequently excite acute inflammation of the kidneys.

It must be borne in mind that the main organ for the excretion of waste material from the system is the bowel. The kidney, the skin, and the lungs are closely allied in their efforts to assist the bowel, in this function of excretion.

To add to the irritation in the kidney by the use of a vegetable or metallic purge is bad medical judgment.

On the other hand, the High Colon Irrigation in the Knee-Chest position affords the best means of excreting the waste material, as well as the toxic gases. The absorption of water in the Ascending Colon will help dilute the urine and render it bland. Also the presence of excess water in the excretion of the kidneys, will promote an Osmotic Action in the tubules of the kidneys, and relieve their congestion.

The close relationship between the functional activity of the liver and the production of toxins or poisons in the blood is generally recognized. Therefore, it is absolutely essential that the Gall-Bladder be called upon to excrete these poisons, in order to relieve the irritation in the kidneys. Evacuation of the Gall-Bladder by proper man-

ipulation is indicated in all cases where the specific gravity of the urine will exceed 1.028.

The impression that Bright's Disease is generally or ultimately fatal is not without foundation. Yet, when we consider the kidneys, in an anatomical as well as a functional aspect, it would appear that a rational consideration of these diseased organs would indicate that they should, under proper care, recover their normal health.

In the first place, we can absolutely regulate the quantity and quality of the urine; secondly, we can regulate the inflammatory progress of the kidneys; thirdly, Nature, being generous in her protection of the kidney conditions, has given us twice the functional power necessary to mantain life; as is proven by the longevity of those unfortunates who have had one of their kidneys removed, and who thrive on the function of the remaining kidney.

Broadly speaking, there is no remedy that meets with such wonderful success in Bright's Disease of the kidneys as the High Colon Irrigation of Sterile Water and Sugar. The presence of sugar in water has the effect of neutralizing the irritation that plain water would afford; while again, sugar in itself is readily absorbed, and is a splendid nutrient material when injected into the Ascending Colon.

The routine custom of throwing into the Transverse Colon, every night, three pints of warm

water, into which a teaspoonful of sugar has been dissolved, meets most of the indications in moderate forms of Bright's Disease. When Dropsical manifestations have been marked, and where Valvular Lesions of the Heart are present, the Dry Hot Pack must supplement the Colon Irrigation.

Apart from forcing a weakened heart to perform extra work, Digitalis is excreted by the Kidneys. Not only is Digitalis irritating to the kidney tissue, but it also has a peculiar action upon the involuntary muscular fibers found in the kidneys.

The causes of Chronic Bright's Disease are usually remote. The after effects of Scarlet Fever are a very common cause. Atrophic Catarrh of the colon, and its failure to throw off the poisonous excrement that has persistently irritated the kidney cells, by compelling them to excrete this excess of toxins, is perhaps the most common of all causes for Nephritis.

Where increased heart action is desired, and where this is not secured thru High Colon Irrigation or by the Hot Dry Pack, stimulation should be produced by the use of *Ice over the Apex of the Heart.*

The High Colon Irrigation, bringing about the Osmotic Action of Water in the Ascending and Transverse Colons, should be persisted in with regularity; long after the urine shows that all manifestation of degenerative or inflammatory changes in the kidneys have cleared up.

In giving the Dry Hot Pack in these cases, care should be taken to afford the patient contact with the open air. In this way, patients with even fairly advanced valvular conditions of the heart, will tolerate the Pack for four or five hours, but with little discomfort.

A fairly strict attention to these measures has met with splendid success in the Guenther Sanitarium.

Where the condition is advanced, the Skimmed Milk Diet will stimulate the increased activity of the sweat glands. It will help also to render the urine bland. *Two parts of milk to one part of water* will meet most indications.

Where the patient is Dropsical, the Colon Irrigation should be practiced twice in twenty-four hours. At the same time, a five hour exposure to the Hot Dry Pack every second day should be given, until the Dropsical conditions have disappeared.

With the first appearance of casts (hyaline or granular) Narcotics, Alkaloids, and coal-tar products should be interdicted. *Smoking should be absolutely dispensed with, as well* as the *drinking of coffee.* The diet should be light but nourishing. Because of the rapidity with which Glycogen of the proteid is oxidized in the blood the use of this diet should be largely modified; as the excess of urates will add to the irritation of the Kidney secretions. Citrus foods are to be encouraged. Or-

ange juice, and compotes consisting of apples, rhubarb, lemons and pears should be encouraged. Well cooked potatoes, grassy foods, such as spinach and Scotch kale, should be permitted. Asparagus contains a sulphur compound that is excreted by the kidneys, and is in itself irritating to these organs must not be used. Alcohol, because of the rapidity with which it is burned up in the blood, must not be tolerated.

CHAPTER XXIII

Diabetes—The Insidious Menace

Diabetes is a manifestation of deranged metabolic (or tissue) activity. Anything, that upsets the equilibrium between waste and repair may produce what we call Diabetes.

One of the most common causes of this disease is Obesity, from alcoholic formation in the stomach, thru yeast fermentation. Other causes are excessive acidity and stoppage of the passage of the stomach contents, induced by any of the following causes such as onion and garlic juice, deranged activity of the liver and pancreas, as well as interference with the flow of their secretions by an impacted Gall-Stone; worry, sorrow, fright and overwork.

The prevalence of Diabetes among orthodox Jews has excited much study of this subject. It is variously estimated that fully eighty per cent. of orthodox Jews between the ages of 50 and 60, following the restricted Kosher diet, suffer more or less from Diabetes. The question of nationality plays but a small part in the matter, as this proportion is found to be approximately the same among the Hungarian, Polish and Russian Jews. In the same family, where some members observe

the strict Kosher law and others do not, Diabetes is not present with the non-observers.

Excluding all other possible causes, my conviction is that the universal use of garlic and onion juice in the Kosher diet is the exciting cause of Diabetes. In a series of experiments in dieting these cases, I have been able to note a lessening in the Glycosuria (sugar in the urine) when garlic and onion juice were avoided.

The draining out of the blood and the soaking of the meat in salt and water to extract the meat juices, as practiced by the orthodox Jews, renders the meat almost tastless. It is to overcome this lack of flavor that garlic and onions are employed. At the same time, the vital mineral salts that might be left in the meat are removed. This, of course, favors acidosis, which in turn, predisposes to Diabetes.

My conviction is that the formation of alcohol and its remote developments are most frequently responsible for Diabetic manifestations. Diabetes is so often associated with Obesity that the merging of the latter into the former is gradual and insidious; to the extent that they seem but different manifestations of the same producing cause. Clinically speaking, the self-same measures used for correcting Obesity meet with success in correcting Diabetes, as I have repeatedly shown, and have numerous records to prove.

The yeast cell is frequently the constant re-in-

fecting cause of Obesity and Diabetes. Each meal brings its new swarm of yeast cells, which generate alcohol in the stomach, beyond the capacity of the red and white cells to meet its de-oxidizing effects.

In so far as Hydrotherapy can improve the functional vigor and the organic structure of the red and white cells of the blood, thus far it is efficient. Thus, thru the High Colon Irrigation, by the efficient removal of the waste products, we stimulate more activity in both the red and white cells.

In Diabetic conditions, the High Colon Irrigation, taken each night upon retiring, is one of the most important operations.

Yeast is inactive in a strong alkaline medium. Therefore, the bile should be encouraged to flow freely by evacuating the Gall-Bladder and by *abdominal massage.* Yeasts are very active in an acid medium. Onion juice, garlic, coffee and spices increase the activity of the stomach, as well as the constriction of the pylorus. In this manner they promote the increased action of alcohol by delaying the expulsion of the fermenting mass into the intestine, where the fermentation would be normally checked by the bile.

In all Diabetic conditions, as in Obesity, the functional activity of the red and white cell in the blood, is defective. The Carbohydrates in the liver fail to pass to the Glycogenic state (fat) and

remain as foreign elements to be excreted by the kidneys. Thus, the grave menace of Obesity not only depletes the vital organs, but by depleting the Glycogenic function of the liver, retards the conversion of glucose into Glycogen, or fat.

Water has no destructive action on yeast. While it is true that mechanically we can diminish the amount of yeast in the stomach by copious lavage, and can check the formation of alcohol somewhat, by the elimination of Carbohydrates in the diet, yet this is as far as the Hydropath can go in correcting Diabetes.

I have given this disease a great deal of study, and confess that I am compelled to resort to medication in order to destroy the yeast cells. I have combined physiological Iodine to meet these indications in a highly efficient form, which is being presented under the name of "Neutroids." The results achieved by these tablets in Diabetes have been extraordinarily satisfactory.

No rule can be established that will meet all cases in this disease. Under acute stimulation of the liver and Gall-Bladder, and thru Irrigation of the Colon, with the free use of the Physiological Iodine before meals, the restrictions in diet will be reduced to a minimum.

Upon the theory of the yeast origin of the trouble, Condiments and Coffee must be vigorously forbidden. If the patients thrive on a general mixed diet—and they usually do—there should not of

necessity be any restriction in the use of Carbohydrates.

Massage of the liver is a rather difficult procedure, requiring not only delicate skill but considerable strength properly to manipulate the inferior surface of this hepatic gland.

My method is to place both hands flat, one over the other, on the right ribs, and with the thumbs over-lapped, so as to procure the greatest purchase, press the thumbs into the abdomen, between the Transverse Colon and the rib border, and then slowly rotate the thumbs against the lower surface of the liver. I demonstrated this method in Boas's clinic in Berlin in 1893, and though endorsed by Dr. Boas, the amount of skill and strength required has prevented its being generally adopted.

In Cirrhosis (hardening) of the Liver, this massage as described, is capable of producing exceptionally fine results. In sub-development of the liver, accompanying Chlorosis (organic anemia) and Amenorrhea (stoppage of the normal menstrual flow) remarkable results are to be expected from it.

With Diabetic Gangrene, every means should be exhausted before operative measures are resorted to. The increased supply of glucose has apparently corrected a number of cases I have seen. Life has been prolonged materially by an excess

of glucose, accompanied by the other measures I have outlined.

With the correction of colon decomposition and auto-intoxication by the High Colon Irrigation, the nervous and mental distress will be greatly relieved. The refreshing sleep that follows the enema is almost a direct antidote to nervousness.

The Skimmed Milk Diet, if accompanied by the High Colon Irrigation and supplemented by raw vegetables and fruits, deserves endorsement as an adjunct to the treatment of Diabetes. In this diet, the yeast bacteria will be inert, as they are incapable of attacking the raw starches.

CHAPTER XXIV

Diseases Peculiar to Men

Prostatitis

In my opinion this disease, more than any other, conduces to the *advance of age* and *increasing irritability of temper.* The very restraint placed upon sexual indulgence is sometimes sufficient cause for the congestion and distention of the Prostatic Gland.

The irritation in and about the base of the bladder, originated by a strongly acid urine or accumulated sediment, aggravates the condition. It is fortunate that the proximity of the Prostatic Glands to the rectum affords splendid opportunity to obtain Osmotic Action. During the acute stage, rest in bed is highly desirable, though the patient himself may object to resting.

The High Colon Irrigation, *practiced twice a day,* gives splendid results in these cases. Also, by thoroughly cleansing the bowel, the waste material of tissue changes is freely eliminated, lessening thereby the excretion of the kidneys, while the absorption of the excess water from the Ascending Colon dilutes the urine rendering it bland.

After this Colon Irrigation and subsequent evacuation, there will be a slow accumulation of water

above the Internal Sphincter of the rectum, to which the posterior surface of the Prostate Gland is exposed. This is especially true if the patient will remain in bed during the first 72 hours.

Washing out the bladder with a sterile solution at the beginning of the treatment will add greatly to the comfort of the patient. Massage of a loose, flabby prostate thru the rectum will also afford comfort. However, where the prostate is hard and tense, massage should be delayed until the Osmotic Action of the Water in the Rectum relieves the condition of tenseness. The treatment by High Colon Irrigation in chronic conditions should be practiced daily for a period of at least six weeks.

In washing the bladder, the fountain syringe should be elevated about five feet. This will provide sufficient pressure to force the water past the sphincters. Expulsion of the urine from within and the pressure of the water from without will force the water through these sphincter muscles into the bladder. The nozzle of the syringe should be introduced about an inch into the meatus, or external opening. When the bladder becomes full, the contents should be voided and the process repeated three or four times, to insure complete cleansing of the bladder.

VARICOCELE

Varicocele consists merely of a Local Varicose Vein or veins in the Scrotal Sac. The prolonged

Sitz Bath of say, half an hour to an hour before retiring, followed by the Local Cold Wet Pack which is to remain on all night, will within three weeks, usually effect a complete recovery. Subsequently, the parts should be supported by a suspensory bandage.

ALOPECIA (BALDNESS)

Baldness is so largely confined to the male that it may be considered almost characteristic. It should be considered as a form of Eczema. Local applications are therefore useless.

The hair glands excrete an odorous, semi-liquid oil. When they are below normal in their activity, the hair and the scalp become subject to a sort of dry decay. Certain factors tend to break down the normal resistance to this process of decay. The tight hat lessens the circulation of the scalp. The alcohol of hair lotions and tonics, dissolves and removes much of the residue of oily material, leaving the scalp and hair dry. The strong alkaline in the various shampoos also removes the natural oils in the scalp and hair.

The process of offsetting the progress of Alopecia is a tedious one. It means persistent effort. The liver and the Colon must be called upon to carry off the infection. Massage of the Gall-Bladder and High Colon Irrigation must be carried out daily. Eggs should be eliminated from the diet, as they are a fruitful field for bacteriological

activity. The weekly Hot Air Cabinet Pack for a five-hour exposure, keeping the head well covered with cloths, to increase the secretion of the hair glands, is all the local treatment necessary.

Soaps used to clean the hair should be as *free from alkalines* as possible. Massage of the scalp, with stretching of its various muscles, is beneficial. This stretching is done by firmly grasping the brow and the back of the head with the hands, and pushing the scalp and hands towards each other.

CHAPTER XXV

Ailments Peculiar to Women

Derangements of the sexual functions are classified as Amenorrhea (stoppage of menses), Dysmenorrhea (painful menstruation), Menorrhagia (excessive menses) and Metrorrhagia (diminished menses).

Stoppage of Menses

Amenorrhea, except in Pregnancy, is due to depleted blood supply, accompanied by mental apprehension. These conditions are noticeably common among immigrant girls, where change of diet and environment, together with discomfort and apprehension, check the normal function of menstruation.

Water in the blood prompts secretion by every organ in the system, so that its absorption is strongly tonic. The High Colon Irrigation, however, not only prompts vigorous action upon the female organs, but it also eliminates the poisons arising from the inability of the digestive system to accommodate itself to the changed diet and environment.

In these cases, the High Colon Irrigation, practiced daily before retiring, and accompanied by

copious drinking of water on an empty stomach in the morning, usually stimulates the prompt return of the *normal menstrual flow.*

Painful Menstruation

This trouble in a very high percentage of cases is produced by a malformation or malposition of the womb. This causes an obstruction to the discharge, and reflexly, an excessive contraction in an effort to expel, causing congestive inflammation of the organ and its membranes.

The High Colon Irrigation, by keeping the Colon empty, primarily affords space for the womb to develop within the Pelvis.

The most frequent cause of displacement of the womb is constipation. The womb is balanced in suspension by the broad ligament with the Cervix portion of the womb pressing against the walls of the rectum. The weight and pressure of a large stool is very apt to bend this Cervix downward. Then we have the condition known as "Antiflexion"—the most common condition found in Dysmenorrhea. When the pressure of the stool is more severe, and of longer duration, we have a complete turning of the womb, which condition is called "Retroversion," the second most frequent condition found in this disorder. Thus it can be seen that the High Colon Irrigation benefits mechanically, as well as in other ways.

The simple act of kneeling and dropping the shoulders to the floor, remaining for some minutes in this position, is of marked benefit in favoring a return of the womb to its normal position. Standing at the edge of a soft mattress and falling forward with force on the face and stomach, will frequently throw a displaced womb forward into its normal position. This should be practiced persistently but with care, not to cause other injuries to the person. Also, *lying on the stomach* while sleeping should be practiced.

In these cases, it is necessary to keep up the High Colon Irrigation every day for several months.

Excessive and Diminished Menses

These two afflictions are but modifications of Dysmenorrhea (painful menstruation), and should receive the same treatment, as outlined above.

Intense nervousness or *hysteria* arising from these or other Uterine troubles may usually be soothed by *bathing* the breasts, abdomen, hands or feet in *Cold Water,* which causes a contraction of the involuntary muscles of the Abdominal Viscera.

Pelvic Cellulitis

Pelvic Cellulitis may be either benign or septic. Gonorrhea is a frequent cause, although bruises and exposure may bring it on.

In this trouble, Osmosis should be practiced with persistence and thoroughness. Distilled Water, rather than hydrant water, should be used, because of the *specific gravity* and *disinfectant action* of Distilled Water. Pieces of cotton, tied with a string so that they may be withdrawn, should be saturated with Distilled Water, and introduced as far as possible into the Vaginal Canal. These should be renewed frequently, to insure a sufficient quantity of water for the proper Osmosis. This Osmotic Action should be maintained for thirty-six hours, in order to effect a reduction of inflammation.

Hydrobromidrosis (Stinking Sweat)

This humiliating affliction predominates in women, in the relative proportion of ten women to one man.

The close relation between the Colon and skin as organs of elimination, must ever be borne in mind in correcting this disease. Consequently, the High Colon Irrigation should be practiced daily in these cases, to afford thorough elimination of the waste products. The Gall-Bladder should be stimulated by massage to promote disinfection in the Colon, by the presence of Bile. The Hot Dry Pack should be used twice a week during the early stages of the treatment, with the daily cold plunge or cold shower to invigorate the skin and its glands.

Caked Breasts, Abcess of Breasts, Fissures and Painful Nipples

The treatment of these conditions is both preventive and curative.

Following the birth of the child, a Cold Wet Pack should be applied over the chest, covering both breasts, and maintained at two-hour intervals until the milk is fully established in these glands. By keeping down the congestion, all inflammatory changes will be prevented, and the Milk-Ducts will not be closed.

When troubled with Caked Breasts, the Osmotic Action of Water should be pushed thoroughly. Every half hour the Wet Pack should be renewed. Sometimes absorbent cotton, *soaked in water,* will be found efficient as an adjunct to the Wet Pack. *Pinned inside the wet towel,* it will furnish considerable additional water.

When the Abcess has actually developed. the Osmosis must be continued for at least four days to insure complete checking of the processes of suppuration.

Fissures of the nipples will be promptly cured by the Osmosis of the Wet Pack. This trouble should not be treated with any applications of salve or ointment if you are going to use water, as the salve hinders the Osmotic Action.

CHAPTER XXVI

Venereal Diseases

The broadcast attempt on the part of certain of the Medical Profession to attribute all the evils of mankind to Syphilis, either acquired or inherited, demands a modest discussion of this disease; as in all probabilities some of my readers will have been humiliated by the attempts of some member of the Medical Profession to attribute their ailments to this disease.

Primary Syphilis is always a local infection, in which the toxins are absorbed by the glandular system and Nature in her efforts to *eliminate this disease calls upon the skin.* Observation of the so-called Wasserman Test for over thirty years, (and I recall its earliest introduction while I was studying in Berlin) has convinced me that it is decidedly unreliable, and far from being diagnostic.

Keeping in mind the fact that the first avenue of elimination by Nature is the skin, as is manifested by the various eruptions of the skin, this indication calls for a rapid draining by the skin of the infection.

Like Tuberculosis, the germ is usually of slow progressive type, and at the earliest appearance

of this disease, the Hot Cabinet Pack should be followed with efficiency and regularity. It was our custom to submit our patients to an eight hours exposure to the Hot Cabinet Pack, and frequently the first pronounced sweat would relieve all the acute manifestations of this disease.

However, keeping in mind the fact that it is a slow progressive poison, the sweat must be repeated. Practically all evidences of Syphilis are negative after the eighth sweat. These may be given every second day or twice a week.

The benefit of the so-called mud-baths in these conditions, is solely from the sweat that they produce, and is much inferior to the Hot Cabinet Pack. In all stages of the disease, this treatment has been decidedly beneficial.

Needless to add, the usual steps to precede the sweat should be the High Colon Irrigation, twenty minutes exposure to the General Warm Tub Bath and the fresh drinking of Cool Water after the perspiration has started.

The benefits of this treatment will be astonishing, not only to the individual, but to the physicians who may follow it. As regards the permanency of this means of eliminating the disease, we have never seen a case that had followed the course of treatment, that is the eight exposures to the Hot Cabinet Pack, ever manifest any symptoms of return.

Gonorrhea

Gonorrhea should be treated with the same intent as we treat Diptheria, that is, the Local Ice Pack should be maintained for thirty-six to seventy-two hours during the acute stage, and water should be given freely to drink, with rest in bed to promote the generation of the Autogen. Frequently this will require longer application but after the seventy-two hours exposure to the Local Ice Pack the symptoms in all my cases have subsided, and at the end of ten days or two weeks I was unable to find the germ of the disease.

CHAPTER XXVII

Other Diseases

The Strange Disease Epilepsy

What is Epilepsy, whence it comes and why, are questions that the physician has been unable to answer. Pathologists, as a rule, agree that the actual convulsion is produced or accompanied by a congestion of the upper part of the spinal cord and the base of the brain.

The causes of this congested condition are frequently found in something more or less remote. Blows on the head, worms during childhood, Auto-Toxemia, unrecognized Malarious infection, displacement of the abdominal organs—especially when accompanied by Bulimia (excess of appetite) and Constipation, are prominent causes. These irritating factors should be sought for and removed.

The most important thing from a Hydrotherapeutic standpoint, is to maintain normal circulation in the brain and spinal cord. This can be brought about most effectively by promoting Osmosis in the stomach and intestines thru the free drinking of water and Colon Irrigation. I have seen a considerable number of Epileptics in

whom the simple procedure of drinking two glasses of water on an empty stomach one-half hour before breakfast, together with Irrigation as suggested, resulted apparently in complete cure.

The close relationship between the Gall-Bladder, the liver, the brain, and spinal cord, is rarely emphasized. In sluggish conditions of the liver, the vertigo or dizziness which often appears simulates pretty closely the symptoms of Epilepsy. I have seen many cases in which the irritation was due to displaced stomach and hardened Gall-Bladder. The correction of these two factors, accompanied by water-drinking half an hour before breakfast, results in the disappearance of both types of Epilepsy—i. e., "Petit Mal," or the less severe, and "Grand Mal" or more severe variety.

In cases where the passage of water is retarded, as is manifested by Constipation, High Colon Irrigation should be practiced daily until the morning draught secures copious evacuation.

The fine line of diagnosis between the "Jacksonian" Epilepsy or Epileptoid Convulsions, and true Epilepsy, is of no importance to the Hydropath, for as their physiological indications are identical with those of True Epilepsy, their treatment should be the same.

I know of no reason for moderation of the diet. However, the fact that diluted milk stimulates a modified form of Osmosis, and is at the same time

substantially nourishing, should indicate its use. When the liver is sluggish, vegetables, such as beet tops, spinach and celery, together with liberal quantities of raw fruit, are of benefit because of their stimulating effect upon the secretion of the Bile.

The results obtained from the Osmotic Treatment of Epilepsy are astonishingly satisfactory, even in senile cases. Not infrequently, there will be no return of the convulsion after the first Irrigation.

St. Vitus's Dance

Where the trouble is not due to actual organic destruction of the Cerebro-Spinal Tissue, the probability of recovery under Hydrotherapeutic Treatment is extremely good. Recovery, however, will be gradual.

In addition to the Osmotic Treatment, as described under the heading of Epilepsy, the prolonged hot bath before retiring is decidedly beneficial, because of its sedative and sudorific action. The patient should be encouraged to remain in the bath three-quarters of an hour at a temperature of 110 to 120° Fhr, and then to lie between blankets.

Poisoning

In Corrosive Poisoning, such as Lead and Bichloride of Mercury Poisoning, and also in Arsenical Poisonings, the skin offers the most favorable

avenue of escape, for frequently the kidneys are so seriously affected by the elimination of these poisons that death occurs in a large percentage of cases.

Lead Poisoning

As a very general rule, this disease is gradual in its onset. It is found largely among painters, lead molders, plumbers and compositors. So-called Painters' Colic is nothing other than the distress produced by the paralyzed condition of the intestinal canal. The "wrist-drop" and the "ankle-flop" are also manifestations of Paralysis. The blue line of the gums indicates that the deposits of lead are general in the mucuous membrane.

Stimulating active elimination thru the kidneys, almost invariably results in producing a degenerating inflammation of these organs, not infrequently resulting in Chronic Bright's Disease. In these conditions the Hot Dry Cabinet Pack should be persisted in systematically every second day, until all manifestations of the poisons have subsided. The Hot Cabinet Pack should last from four to five hours. The diet should be low in protein (nitrogen compounds), and should consist mainly of cooked fruits and vegetables.

Bichloride of Mercury Poisoning

Because of the widespread use of Bichloride of Mercury as a disinfectant, not infrequently, these

tablets are taken either with suicidal intent, or by accident. Gradual fatal degeneration of the kidneys has been almost the invariable result. A recent case, however, will illustrate the Hydrotherapeutic Treatment of these conditions, and show the marked advantages of Water, properly applied, over all other forms of treatment.

Mrs. S——, in a darkened bathroom, mistook a solution of Bichloride of Mercury (7½ grain tablet dissolved) for drinking water, and swallowed practically all of it before she detected its characteristic taste. Her physician hurried her in a taxi to the Clinic, where I thoroughly Lavaged out the stomach contents. After this, following a High Colon Irrigation, she was placed in a Hot Dry Cabinet Pack for a six hours' sweat. Examination of her urine the next morning revealed traces of Albumen and Mercury. She was then subjected to an eight hour exposure in a Hot Cabinet Pack. The following morning the urine was normal. There were no evidences of Mercury. However, I insisted upon an additional eight hours' exposure to the Hot Cabinet Pack. It is now several months since this incident, and no manifestations are present at this date.

As long as there is any trace of Albumen in the urine, the Hot Cabinet Pack should be used daily.

Arsenical Poisoning

This condition is found largely among paper-

hangers, where the arsenical dyes used to color the papers are the source of the infection. The onset of this poison is so very insidious that in a very large percentage of cases it is not recognized. The main characteristics are the excessive prostration, Anemia and mild disturbances in the kidneys. These cases are frequently mistaken for Anemia, Chlorosis or Malarial Cachexia. Recovery is always slow, the symptoms persisting for many months. When a paper-hanger, a dyer, or a user of arsenical dyes feels himself continually tired, and when he looks pale, he should change his occupation. The great danger in these cases is the fatty degeneration of the kidneys with consequent Bright's Disease. The tri-weekly Hot Cabinet Pack of four or five hours' duration should be persisted in for at least five or six weeks in order to protect against degeneration of the kidneys.

Tetanus (Lockjaw)

In many sections of the world this disease is practically unknown. In and about certain sections of Long Island it is not uncommon. In fact, the Plains of Hempstead stand out prominent as being the seat of most frequent manifestations of this disease.

Apart from the disinfection of the local seat of infection, the indications are for the Hot Cabinet Pack, following the High Colon Irrigation. This Pack should be maintained for ten hours as we

have here an extremely fatal disease, and it is only by eliminating this germ thru the organ which can best tolerate it, that is the skin, that we can hope to make recovery without any after results.

The Hot Cabinet Pack should be repeated for modified duration, long after the manifestations have ceased, at semi-weekly intervals.

Parasitic Diseases

In contrast with the germ disease and congestive and organic disturbances, Parasitic Diseases receive practically no benefit from any use of water. Such diseases as scabies (itch); Pediculae (crabs) require destruction by means of medicine. Infections of the intestines by the various worms, the hook-worm, the round-worm, the pin-worm, are not materially benefited by any use of water. These require destruction by some toxic remedy. So that we must recognize that these conditions are ones that are outside of the limitations of Hydrotherapy to correct.

Skin-Diseases

Eczema

The general Hot Tub Bath is indicated mainly for treating local skin troubles. In general Eczema the prolonged hot bath, frequently lasting an hour or more, is valuable for its solvent action upon the hard scales as well as its Osmotic Action upon the inflamed skin. This should be followed

by the Hot Dry Pack. The same is true in Extensive Psoriasis.

Eczema is probably one of the most stubborn of skin-diseases, and the correction of it must be approached with a determination to use heroic measures. It has been almost a universal custom to protect the skin away from moisture in this condition, and frequently to supplement the treatment by an internal use of Arsenic.

Keeping in mind that water applied to the skin has a solvent action, having the ability to loosen the hard scaly outer covering, and that with pronounced Osmosis all bacterial activity will be checked because of the blood being drained from the parts, we have an ideal treatment for this condition in the persistent application of water.

Where Eczema is local, like on the hand or the arm, the Osmotic Action of water can frequently be maintained by use of wet cloths, supplemented by immersion in the water. Where the Eczema is general, the prolonged immersion in water in the shape of a Tepid Tub Bath best meets the indication. These baths should be of from two to five hours' duration.

It must be kept in mind that the skin is the avenue of elimination, and that the failure on the part of the other organs of elimination to fulfill to the utmost, their functions, the skin is frequently called upon to excrete irritating substances, which to the inflamed skin is extremely aggravating.

Consequently, it is of the greatest importance in Eczemas that the kidneys and the bowels are maintained in a condition of functional activity. The High Colon Irrigation practiced daily or twice weekly; the drinking of cold water on the empty stomach on rising, should be matters of routine in the promotion of recovery from this disease.

Acne (Blackheads—Pimples)

This is the most common of skin conditions, and frequently the most stubborn. It is generally agreed that the Comedone (blackhead) is vegetable in its origin, altho this is disputed by some authorities. Joseph goes so far as to print a picture representing the alligator as being the actual Comedone. Whether the origin of this is from without or within, is a grave question. There is no doubt but that a sluggish condition of the liver and the Alimentary Canal usually accompany Acne.

The persistence with which Acne resists all forms of local treatment therefore verifies the fact, that the origin of this disease is largely from within the system and the frequency with which eradication of the Comedone and disinfection of the part only results in its return, goes still further to indicate that the disease, to a great extent, owes its origin from within.

It is of primary importance that the kidneys and the bowels be called upon in these conditions

to eliminate waste material and relieve the skin.

The diet should be of such a character as to excite glandular activity of the liver, and for this reason raw fruits, cooked fruits and vegetables should be encouraged. On the other hand, eggs and meats do not promote activity in the liver cells, and should be proscribed against. Condiments and coffee should not be permitted. In fact Raw Fruits should constitute the main element in the diet.

The prolonged application of the Local Wet Pack over the affected parts, has the result of loosening up both hard layers of skin, and thru its Osmotic Action it checks the circulation, having a destructive action upon the infection.

After thoroughly cleansing the face or affected parts a well-saturated towel should be applied covering the face, permitting however, sufficient opportunity to obtain air. This Wet Pack should be maintained at least two hours, as frequently as possible. Massage and expulsion of the actual comedone will hasten the return to the normal skin.

However, frequently the High Colon Irrigation must be practiced for months and even years to insure a clean, clear skin. This Wet Pack as prescribed is preferably cold, altho if discomfort is experienced the warm Local Wet Pack will have efficient action.

Progress of recovery will be in direct proportion to the frequency, and the duration of these facial treatments.

Certain fatty acids have a solvent property on their fats. Olive oil has a slight solvent action on most sebaceous matter (skin fat) and the custom of bathing the face in olive oil will have the result of assisting in removing the hardened secretions of the skin glands. On the other hand, the use of the various applications that dry and harden, such as the various mud-baths containing aluminum, merely extract the fluid portion of the fatty secretions, and do not in reality promote the removal of the actual secretion. Needless to add, the frequency and thoroughness of bathing not only thru the cleansing action but from the stimulation that comes from scrubbing the skin, has a beneficial action.

Psoriasis

This is a skin-disease characterized by Local Gangrene of the superficial layers of the skin. To what extent it owes its origin to lack of nerve stimulation in the skin, and to what extent it is due to improper activity on the part of the kidneys involved, is largely speculative. Under the use of such drugs as Chrysarobin the scales disappear but only to return, and it is my conviction that so powerful a caustic as Chrysarobin, which is capable of penetrating thru the outer layers of the skin and

destroying practically every form of bacteria and parasites, that were the disease of a bacterial origin, the application of this drug would have effected the destruction of the infecting germ.

There seems to be a close connection in this disease with the drinkers of coffee, and in practically every case that has come under my observation, I have been able to trace excessive use of coffee for years. To what extent and how this may bear relation to Psoriasis is purely speculative.

However, I make it a uniform rule to proscribe against the use of coffee. I have seen promising results, altho I will not say cure, from the use of the hour immersion in General Warm Bath before retiring, followed by a Hot Pack in bed, with the free drinking of water upon rising, and the occasional use of the High Colon Irrigation.

Bland diet is to be encouraged in these cases. All condiments should be avoided. Some authorities claim wonderful results from the exclusive Milk Diet. However, if this should be undertaken, (I have never had any personal experience with this Diet) it is strongly advisable to keep in mind that the Milk should be Skimmed of all fatty substances before it is drunk.

CHAPTER XXVIII

Minor Ailments of Daily Occurence

Cuts

The Laity are too apt to look upon the average Cut or Laceration as being insignificant, and yet when we consider the immediate effects and, frequently, the remote results of even a minor Cut or Laceration, we are not justified in treating such injuries, lightly.

The skin in its outer layers offers a splendid protection against infection. With any destruction of the outer layers of the skin the susceptibility of infection is increased one hundred-fold. Consequently, all Cuts or Lacerations, no matter how insignificant, should be met with efforts to prevent this infection.

In practically all cases of Laceration there is the element of Bruise or Crushed condition of the tissues in or about the seat of the injury. With this accompanying Bruise, there is always a reaction in which the parts become congested. Frequently, the element of congestion, if exaggerated, retards the processes of repair, and fundamentally, it is very essential to keep the congestion in and about the injury to its minimum intensity. Consequently, the dressing, no matter of what nature

the Cuts or Lacerations may be, should be wet. The Osmotic Action of Water in the Wet Pack relieves the congestion, and in this way not only relieves much of the pain and distress, but materially promotes the processes of repair. Not only does the Wet Dressing relieve the congestion, but the very fact that the parts become deprived of their excessive blood enables Nature to resist infection; and one of the best means of preventing Blood Poisoning from a wound is the use of a sterile Wet Dressing.

It can be readily recognized that with a separation, as we have in a Cut and Laceration, the support of the parts is lessened, and in this way Nature is not afforded the same opportunity to maintain her normal degree of circulation as otherwise. The very force of gravity will excite a derangement in the circulation, so that in Cuts or Lacerations, support, such as we obtain by bringing the parts together, either by stitching, an adhesive plaster, or by means of a bandage, is essential. When the bandage is used it is practical to maintain the part in a Wet Bandage, preferably putting on the bandage after it is wet, for it is possible that the bandage of unbleached muslin will somewhat contract and produce undue pressure or tightness upon the part.

In substance, wherever the outer layers of the skin, to even a mild degree, have been destroyed, it

is essential to protect the parts from infection and inflammation by the use of a supporting Wet Pack.

Bruises

A Bruise in reality is nothing more or less than a modified destruction of the skin and tissues underneath, without actual separation. The finer blood-vessels are usually ruptured, producing a hemorrhage which we technically call Ecchymosis, or Discoloration. The processes of inflammation rapidly appear in a Bruise while the discoloration, as a very general rule, is slow in its disappearance.

The treatment of a Bruise should always be in the nature of a Cold Wet Pack. The reaction from the cold increases the superficial circulation, and thus affording greater powers of Osmosis, draining the blood from the inflamed parts.

It must be borne in mind that the greater the area of the Wet Pack, the greater will be the Osmosis, and more efficient will be the drainage from the inflamed part. Consequently, the Wet Pack in and about the Bruise should be extensive.

Sprains

A Sprain is the term usually applied to the stretching, and not infrequently the actual rupture of the tendons and ligaments. Because of the fact that these tendons and ligaments have practically no circulation of blood, the processes of repair are slow, and frequently, the lameness and pain

will exist for months and years.

There is no injury attended with more severe pain and more difficult to obtain prompt recovery.

Rest is absolutely essential, as the fibers in the tendons and in the ligaments, in their earliest stages of reconstruction are semi-gelatinous, and any tension upon them will excite separation.

The duration of the Sprain is directly in proportion to the extent of destruction to the fibers in the tendons or ligaments.

Because of the element of pain, heat, which is a nerve sedative is indicated.

During the early stages of a Sprain, the Cold Wet Application following the prolonged immersion in a warm bath is indicated.

Recovery will be increased just in proportion to the thoroughness with which we carry out these details. For instance, in the matter of a Sprained Ankle, which is one of the most common of these injuries, should be met with as follows: The foot and ankle should be immerged in warm water for three or four hours, followed by being wrapped in cotton-batting that has been thoroughly saturated in Cold Water, and loosely bound. In this manner the Cold Wet Pack of twenty-four hours duration will be secured.

After the pain and inflammatory conditions have subsided, fixation of the joint, in order to promote rest and afford reconstruction of the destroyed fibers, should be followed out. This may be done

with adhesive plaster, Plaster of Paris, or the application of a wooden splint.

Sunburn

The usual sunburn is about the face and head, and the possibility of a long immersion of the head in a hot bath is out of the question. Because of the *reflex internal congestion,* and the Mental and Gastric Symptoms, which frequently accompany a *prolonged exposure to the sun,* general Osmotic Action is necessary. Not infrequently Pneumonia is developed from this internal congestion, resulting from exposure to the sun.

The so-called "Brain Fever" following severe exposure is another illustration. The use of the Ice-Bath, as practiced in many Hydrotherapeutic Institutions, cannot be too severely condemned. The nerve periphery in the skin is over-sensitive after long exposure to the sun, and the shock of the cold water drives the blood into the internal organs with increased intensity, endangering the patient's life from possible Apoplectic complications.

In cases of Severe Sunburn, the Osmosis should be internal as well as external. The temperature of the general bath should be about 100,° and should be maintained at that until the patient experiences a general sense of relief. Usually an hour in the warm bath, following the High Colon Irrigation, will afford splendid results. The patient should

then be placed between light blankets and a mild sweat encouraged.

In local sunburn of the face and shoulders, the Cold Wet Pack, changed at half-hour intervals, with either a tube in the mouth or nose exposed for breathing, this Pack maintained from eight to twelve hours will usually completely correct the condition.

Headache

It should be thoroughly understood that Headache is merely a Symptom—*not a disease.* It usually indicates a poisoned condition in some part of the system, and in a majority of cases may be traced to some digestive disorder or abnormality—plain Indigestion, Gastritis, Constipation, Sluggish Liver and so on, the treatment for all of which has already been outlined. Catarrh will almost inevitably cause Headache, as will Kidney and Bladder troubles. Some Headaches may arise from Anemia, others from high blood pressure. Overheated rooms, improper ventilation, sun-glare in the eyes and other causes may be named. Headaches usually presage the coming of Colds, Influenza, Typhoid Fever and many other acute diseases. They attend practically all the female disorders.

A case of Headache should never be combated by dosing oneself with drugs. Incidentally, some of the most insidiously harmful drugs on the

market are those Coal-Tar derivatives, which are sold to deaden Headache. *Seek out the disease* of which the headache is a warning, and strike at that. Exercise and fresh air are great enemies of Headache, as they remove many toxins from the blood.

Headaches may often be relieved by very Cold Wet Cloths Applied to the head, forehead and back of the neck. Part the hair here and there, and rub the scalp with the finger-tips dipped in Ice Water. If the Headache is very severe, give alternate hot and cold fomentations to the head and face; those over the face and eyes are found to be particularly soothing. Protect the eyes from the sudden changes in temperature by laying smaller cool cloths over them.

Headaches may sometimes be caused or aggravated by cold extremities, especially cold feet. Sedentary brain workers have so much blood drawn to their brains by their long and arduous thought, that they may be said to be suffering from a mild form of congestion of the brain. Immersing the feet and hands in very Hot Water at the same time that Cold Compresses are applied to the head and neck, will often draw the blood away from the brain sufficiently to afford relief.

If one is a Chronic and persistent sufferer from Cold Feet, it is advisable to improve their circulation in this manner, place side by side two basins of water, one as cold, the other as hot as can be borne. Immerse the feet in the hot water for two

minutes, then in the cold for a half a minute. Repeat this up to twenty or twenty-five times. Then hold the feet in the cold water for a minute or two and dry them thoroughly with a rough towel. Do this once a day for several days, and the stimulative massaging thus given the blood-vessels will usually cure the most obstinate case of cold feet.

If Headaches are due to unsettled nerves, the treatments I have described will afford relief for the time being, but should be supplemented by rest for both mind and body, outdoor exercise, tonic and sedative baths at the proper times, and cleansing of the Alimentary Tract by water drinking and Irrigation.

Sore Throat

A considerable percentage of cases of Sore Throat are merely an early manifestation of Rheumatism. Therefore, the High Colon Irrigation, as in Rheumatism, is indicated, followed by the prolonged sweat, which should be maintained for at least four or five hours. Sore Throat which is attendant upon a Cold should be treated as described in the chapter on "Colds."

CHAPTER XXIX

Neurasthenia
Nervous Prostration

The term Neurasthenia is like the term Anemia, that is, it covers so wide a deviation from the normal functional activity that anything which may depress or unduly excite nerve activity comes within the category of this nomenclature.

To generalize the nerve conditions within the Human Frame, we divide the nerves into three classes, Nerves of Impulse, Nerves of Inhibition or Control, and Nerves of Conformity, that is, nerves that bring about a relative activity to conform with the functional activity of one organ to another. Thus, it can be seen that with an excessive impulse of the nerves of Motor-Stimulating in a normal relationship, there would be a relatively stronger impulse in the Nerves of Control; and thru the Nerves of Conformity, there would be a relatively increased action in the other organs associated through the nervous system with the first organ, and increased nerve stimulation. Perhaps a simple illustration of this might better explain.

In the moment of fright, from the psychological measure, we have the impulse of the Nerve of Control, that is, the Vagus Nerve, which finds its center in the brain, and as a result of this great impulse

and inhibition or control, the heart is checked in its activity, producing as a result of the weak heart action, a sense of faint and not infrequently unconsciousness. Reflexly, the Nerves of Motor Impulse located in the heart walls respond to overcome this; usually in direct proportion to the impulse of the Nerve of Control, and we have a rapid exaggerated activity in the heart, as a result of stimulation, and the Nerve of Inhibition, or Vagus, is modified, relieving the heart racing, that is frequently described as the fluttering heart.

Accompanying these manifestations in the heart will be the early, shallow, light breathing thru the Nerves of Conformity, which will gradually merge into that of great deep, breathing respiration, not infrequently sighing in character, and with the subsiding of the heart symptoms will be the gradual resumption of normal breathing.

It is my conviction that Neurasthenia is not due to any lack of the actual nerve impulse, for there is very rarely real stupor or stupid condition in these patients, unless it be accompanied by Paresis or Idiocy; but, the disease itself is a weakness in the conformity of these three systems of nerve impulse that I have just described.

The rational treatment in these conditions is moderation. Anything which would cause excessive impulse, such as excitement, danger, fright, must be avoided. On the other hand, anything which would excite undue labor, also is a disturb-

ance in the relationship. For a Neurasthenic to run after a rapidly moving car brings about a temporary lack of coordination between these systems; so that, we not infrequently have nausea, labored breathing and palpitation of the heart, because of this active exertion on the part of the Neurasthenic. Primarily, it is just as essential that the Neurasthenic avoid over-exertion of the muscular system, as it is to avoid anything which would excite undue impulse in the brain.

While a derangement in the heart may be primarily thru the Nerves of Conformity or Systems of Conformity, if the condition be of long standing, and as a rule these conditions are progressive, practically every system will be affected. As a rule, these people are Dyspeptics and Anemics and are decidedly lacking in their emotions and courage.

These are the cases where the Hydrotherapeutic Treatment is almost indispensable. Keeping in mind that there is practically no muscular element and no motion in the skin, it can be readily recognized that any congestion or any activity in this organ results in no disturbance if its functional activity or in its organic structure. In addition, not having any muscular element, the Nerves of Inhibition and the Nerves of Impulse are decidedly insignificant; in fact, there are none in this organ.

It is a recognized physiological fact that with a depleted blood supply there is necessarily a depleted functional activity, so that by maintaining

the congested condition of the skin, we reflexly maintain the internal organs in a condition of lessened blood supply, and consequently in a condition of lessened activity. Involuntary organs, such as the heart, the lungs, the stomach, the liver, and the kidneys, obtain their rest between muscular efforts, so that, when we lessen the heart impulse, and increase the period between the impulses we afford the heart rest. This is practically true of all the other involuntary organs. Therefore, it requires very little stretch of imagination to recognize the benefits of the prolonged warm bath and the Hot Dry Pack, in these conditions.

In giving the warm tub bath the temperature should be as near that of the blood as is possible. As we do not desire any thermal stimulation, the temperature of from 90 to 110° should be the limit. The Custom of taking the High Colon Irrigation followed by a twenty minutes immersion in the warm bath, and a sleep between blankets Packed with Hot Bottles, with an open window in the bedroom, if persisted in will correct most of the manifestations of Neurasthenic conditions.

These are the cases that in my hands have met with very poor results in the use of electricity, either in the Galvanic, Faradic or the High Frequency. The fact of the matter being that we should strive to keep away all stimulation and aim solely to rest.

Neurasthenia is practically unknown in those locations where the body is exposed largely to the air. With the rapid contact of various atmospheres to the skin, the circulation of that organ is very active to meet these emergencies, and as a result, the relative amount of blood in the skin is greater than that in civilized localities,where we protect the body from these air currents. Consequently, the custom of exposing the body to the air is to be encouraged. In the privacy of the bedroom, with the windows open to afford good ventilation of air, the custom of taking the fresh-air bath, for several hours, should be practiced. In spite of the ridicule placed upon the society women who parade the beach in scanty attire, the custom is a decidedly beneficial one from the standpoint of relieving or resting the nervous system.

The diet of the Neurasthenic requires special attention. As a rule, they suffer from Anorexia, that is, lack of appetite. Not infrequently they have a craving for sweets; this is largely along the line of physiological effort to meet the conditions of the disease. For the stomach to digest a hearty meal requires increased nerve impulse, so that the very condition that we are striving to correct is induced by the encouragement of eating excessively. On the other hand, these patients require the best nourishment, as their blood is Anemic and their organs as the result are under-nourished. Sugar, undoubtedly, is one of the easiest digested

foods we have, but in the blood-stream requires considerable oxygen, which the Anemic blood cannot supply, with the result that Neurasthenics of long standing become obese. In this way the diet of excessive sugar has its menace.

Primarily, the food of the Neurasthenic should contain absolutely no condiments. Coffee should be absolutely forbidden. Boiled foods are the easiest digested, and frequently if given in the liquid form will be better tolerated by the patient. These are the cases that will take fresh buttermilk or fresh Skimmed Milk, as a rule with little distress. If the patient has no relutance to the use of raw eggs, the whipped egg, with Skimmed Milk and sugar added, is the ideal food for the Neurasthenic. Coarse and fried foods in these conditions should be avoided.

The bowels should be regulated by the drinking of water, and the occasional use of the High Colon Irrigation. In spite of the fact that water is propelled into the stomach thru the peristaltic motion in the Esophagus, nevertheless, it frequently reaches the stomach at a temperature fairly below that of the blood-vessels and Neurasthenics, *must avoid the drinking of ice-water;* in fact, they should drink water that is almost tepid.

Exercise, in Neurasthenics should be approached with a great deal of caution. The individual should have absolute freedom to regulate the amount and character of his or her exercise, provided it be

not too indolent or too excessive. The solitary walk thru the country roads or better, paths is ideal. The indulgence in some form of diversion which requires unconscious exertion is without rival in its benefits. Needless to add, the exercises should be taken largely in the open air. These cases improve more rapidly at the seashore than otherwise. In fact, it is my honest opinion that were it not for the fact that most of our large commercial centers are located near the sea-level, and receive the benefits of the condensed atmosphere, the prevalence of Neurasthenia would be one-hundred-fold increased.

If there is one remedy that excels all others for the Neurasthenic business man it is the workman's bench. The average business man only increases the nerve impulses by hurrying thru crowded city or country roads in a rapidly moving automobile, whereas, if he had a bench and a set of tools, a hoe or a rake, or had something that he wanted to do, and was left to do it with perfect freedom, he would not only obtain a great deal more happiness in life, but would improve his physical and mental condition.

As a rule, both men and women are too fastidious about their appearance. The restraint against following natural impulses to do things, because of their interfering with the personal appearance of the individual, denies freedom of Natural impulse. Much of the benefit of actual physical

labor is not in the exercise as much as it is in the freedom of doing what our impulses prompt us to do. The high-strung society woman frequently will forget her dignity and austere mien, and cuddle a dirty-faced child, impulsively singing a lullaby, with a sense of relief and freedom. The magnate in emergency, will get down on his knees with his chauffeur and tinker to correct the defect in his car, feeling a sense of exhilaration for having accomplished something that he was interested in. So that, it is highly advisable for the Neurasthenic to avoid, as far as possible, all restrictions that society or his commercial position place upon him.

Finale

In analyzing the use of water in the correction of disease we are reduced to *three simple measures.*

(1) *Elimination*—The avenues of elimination are four; the digestive tract, the urinary tract, the skin, and the respiratory system. When Nature indicates her selection of these avenues of eliminating disease, we should cooperate with her to effect a more prompt and thorough elimination.

(2) *The Generating of Autogens*—In the laboratory we find that water is capable of generating Autogens, probably chemical Autogens, with a fair degree of rapidity. In the body, clinically, we find ideal environment for the generation of Autogens; so that, the object in all diseases is to afford the system the best possible supply of water in order to promote the generation of these Autogens which are destructive to the germs of disease.

(3) *Congestive conditions require* relief by withdrawing the blood from the congested parts. The skin has the greatest area of exposure, and is best fitted to meet the deviation from the normal temperature. Its reaction is prompt and efficient and Nature has arranged that the skin, without derangement of circulation, can become engorged with blood, or vice versa, without any inflammatory changes resulting. So that, we should remember, in all inflammatory conditions anywhere within the

system, to drain the blood from the inflamed part into the skin.

These fundamental rules should be understood and a common sense application of them should be readily used by everyone, whether they be of the Medical Profession or otherwise.

Disease, instead of being misunderstood, should be looked upon as an incident of life, readily corrected and amenable to the natural functions of the system.

Disease, instead of being a source of expense and anxiety should be looked upon lightly, and as something that can be easily eliminated.

If my readers have grasped the simplicity and yet the wonderful efficacy of Nature's simplest remedy *WATER,* I shall feel that my work has not been in vain.

Myself and associates will be glad to give any of my readers further advice if they will communicate with me.

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